Oct. 20, 1953 T. W. NICHOLS 2,655,755

TOY CAP PISTOL AND CARTRIDGE

Filed March 31, 1950 2 Sheets-Sheet 1

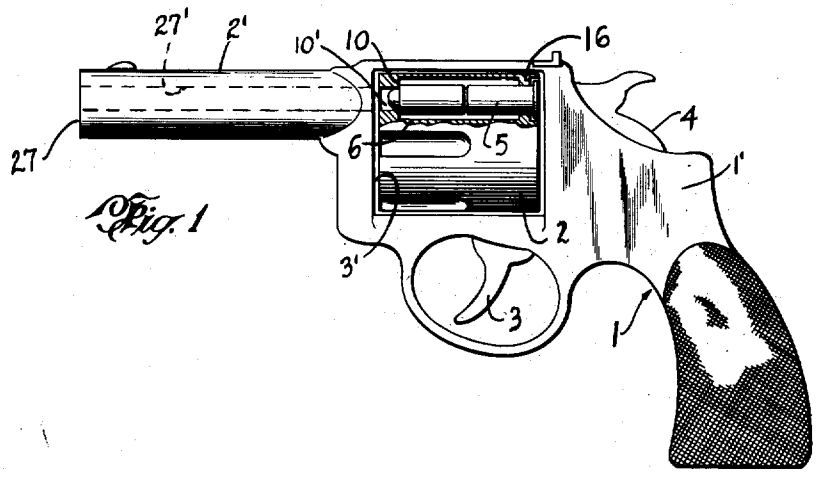


Fig. 1

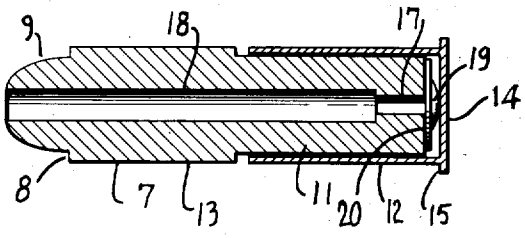


Fig. 2

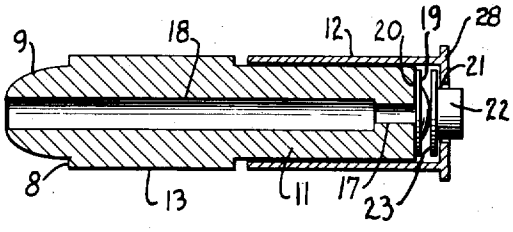


Fig. 3

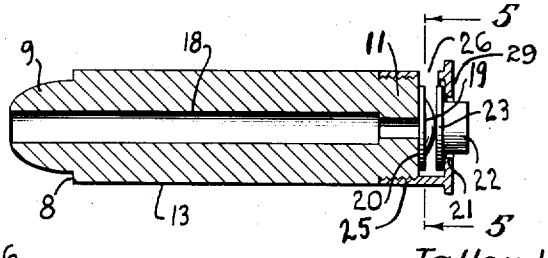


Fig. 4

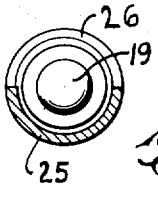


Fig. 5

Talley W. Nichols
INVENTOR.
BY Lester B. Clark
& Ray L. Smith
ATTORNEYS

Oct. 20, 1953 T. W. NICHOLS 2,655,755

TOY CAP PISTOL AND CARTRIDGE

Filed March 31, 1950 2 Sheets-Sheet 2

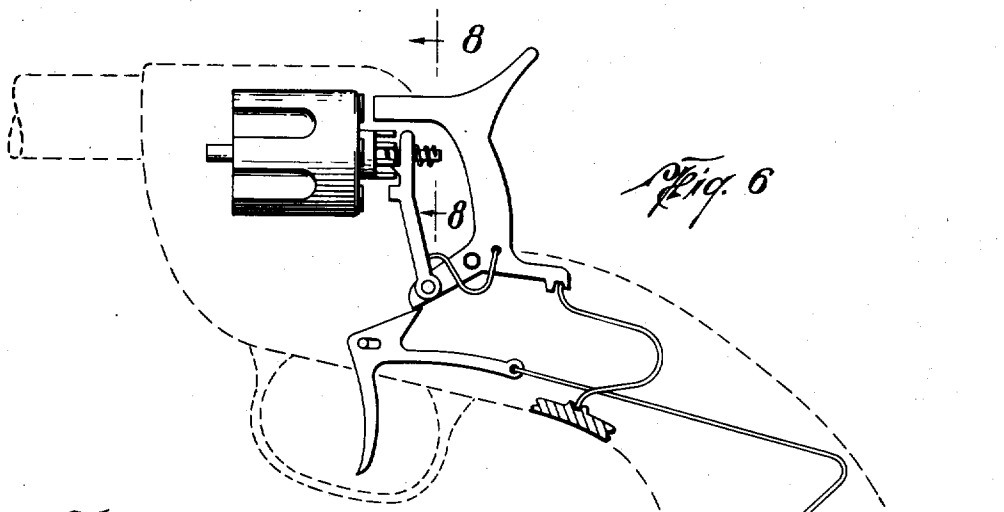


Fig. 6

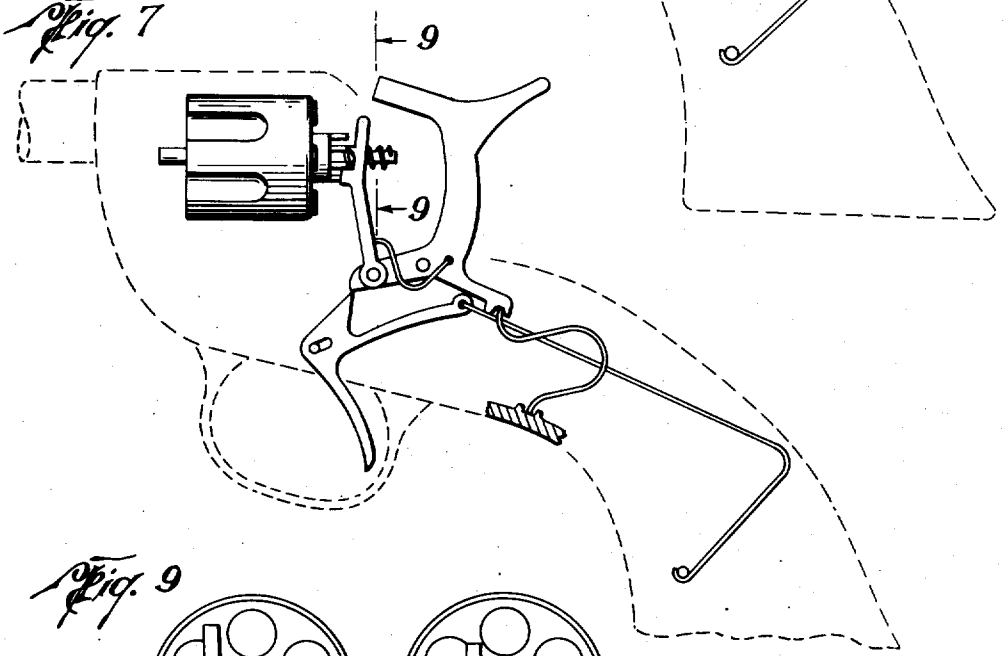


Fig. 7

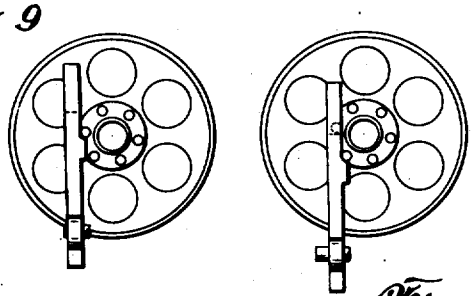


Fig. 9

Fig. 8

Talley W. Nichols
INVENTOR.
BY Wm. E. Ford
ATTORNEY

Patented Oct. 20, 1953

2,655,755

UNITED STATES PATENT OFFICE

2,655,755

TOY CAP PISTOL AND CARTRIDGE

Talley W. Nichols, Pasadena, Tex.

Application March 31, 1950, Serial No. 153,020

2 Claims. (Cl. 42—58)

1

This invention relates to a cartridge structure and a pistol having a rotatable cylinder therein provided with compartments to receive such cartridges.

It is an object of this invention to provide a cartridge and a pistol having a rotatable cylinder therein provided with compartments to receive such cartridges.

It is another object of this invention to provide a cartridge having a sleeve insertable over the bullet so as to enclose a firing cap against the end face of the bullet.

It is a further object of this invention to provide a cartridge of this class in which the closed end of the sleeve bears directly against the cap to be fired.

It is a further object of this invention to provide a cartridge of this class which has a hammer operable within the sleeve end to fire the cap.

It is yet a further object of this invention to provide a cartridge of this class which has a slotted sleeve on the firing end thereof so that a cap may be dropped through the slot into firing position to be fired by a mandrel operable through the end face of the sleeve.

It is a further object of this invention to provide a cartridge of this class having a rim or shoulder on the nose end of the bullet, and a pistol having a cylinder compartment shoulder against which the bullet shoulder may bear.

It is a further object of this invention to provide a cartridge of this class having a bullet with reduced diameter on the end opposite the nose end to receive a sleeve thereon of outer diameter substantially equal to the outer diameter of the central portion of the bullet.

It is yet a further object of this invention to provide a cap pistol and a cartridge of this class to be fired therein, such cartridge having a bore through the bullet end adjacent the cap and in contact therewith and a larger bore extending from this first bore through the end of the nose of the bullet through which a substantial part of the smoke may pass and from thence out through the bore of the pistol barrel.

It is also an object of this invention to provide a bullet of this class in which substantially all of the smoke given off when the cap is fired passes out the nose of the bullet.

Other and further objects of this invention will be apparent when this specification is considered in connection with the drawings in which;

Fig. 1 is a view of a pistol, part in section, showing details of cartridge position in a compartment of the rotatable cylinder.

2

Fig. 2 is a sectional view of one modification of a cartridge.

Fig. 3 is a sectional view of a second modification of a cartridge.

Fig. 4 is a sectional view of a third modification of a cartridge.

Fig. 5 is a transverse sectional view taken along line 5—5 of Fig. 4.

Fig. 6 is an elevation of the cylinder rotating and cartridge firing mechanism, before the trigger is pulled.

Fig. 7 is an elevation of the cylinder rotating and cartridge firing mechanism, as the trigger is being pulled.

Fig. 8 is an elevation of the cylinder end and rotating device taken along line 8—8 of Fig. 6.

Fig. 9 is an elevation of the cylinder end and rotating device taken along line 9—9 of Fig. 7.

The pistol 1, shown in Fig. 1, has the frame 1' from which the barrel 2' extends forwardly. The cylinder 2, having the bored compartments 6 therein, which are equally radially spaced from the cylinder axis, and which are equally spaced apart circumferentially, is mounted, as shown in Fig. 6, on the shaft 30, which is journalled in bearing means, not shown, but provided by the frame 1'. Such construction is well known in the art, as is the means for rotating the cylinder each time the trigger 3 is pulled, to place a bore 6 uppermost and in line of impact of the hammer 4, which falls as the trigger pull is completed to impact a cartridge 5 in position in such uppermost bore 6.

Although it has been stated that such rotating and firing means is conventional, one such construction is shown in Figs. 6–9, in order to set forth the co-ordination and relationship between the cartridge structures to be hereinbelow described, and the bores 6 of the cylinder 2, and also the bore 27' of the barrel 2'.

The hub 31 on the cylinder 2 has extending therefrom pins 32, which, like the bores 6, which they equal in number, are equally radially spaced from the cylinder axis, and equally spaced apart circumferentially, and which are angularly spaced at a pre-determined angle from the adjacent bore 6 in a counter-clockwise direction, as viewed in Figs. 8 and 9. The torsion spring 33 bears at one end against the face of the hub 31, and at the other end against a projection, not shown, on the frame 1', and resists the tendency of the cylinder 2 to rotate freely.

The hammer 4 is pivotally mounted on the pivot pin 34 which extends from the frame 1', and the spring 35 bears at one end in the slot 36 in the hammer arm 37, and at the other end

in the slot 38 in the frame 1' to normally urge the impact head 39 of the hammer 4 toward the cylinder 2. The trigger 3 is mounted on the pin 40 which extends from the frame 1' and through the slot 41 in the trigger, and such trigger has the cam 42 thereof to bear against the cam arm 43 of the hammer 4. The spring 44 is anchored at 45 on the frame pivot 46, and at the other end 47, it extends into the eye 48 on the trigger arm 49, and thus the spring 44 urges the trigger 3 against the hammer 4 to oppose its urging by the spring 35.

The rotating device or pusher 50 is pivotally mounted on the pin 51 which extends from the hammer 4, and has the tooth 52 thereon to engage the pin 32, as shown in Figs. 6 and 8, when a pull is exerted on the finger arm 53 of the trigger 3. The spring 54 has one end 55 inserted into the hole 56 in the hammer 4, while the other end 57 bears in the slot 58 in the pusher 50. This spring 54 thus urges the pusher 50 forwardly and into contact with the pins 32.

As the pull on the finger arm 53 continues, the hammer 4 is urged rearwardly to compress the spring 35, and the cylinder 2 is rotated until the bore 6 having the cartridge 5 therein, is in the position shown in Fig. 9. To insure that this position of the bore 6 is maintained, the lug 59 on the pusher 50 is positioned to block further rotation of the cylinder 2, as it has been moved into the path of travel of the pin 32' shown adjacent thereto in Fig. 9.

Finally, the trigger cam 42 breaks contact with the cam arm 43 of the hammer 4, and the force of the compressed spring 35 urges the hammer 4 forwardly so that the impact head 39 strikes the cartridge 5 in the bore 6 to ignite or detonate the cap therein, as will be hereinafter described. When such breaking of contact occurs, the cam arm 43 moves into the open space between the cam 42 and the trigger arm 49 and thus the cam 42 is above the cam arm 43 as the spring 44 urges the trigger 3 forwardly. However, since the trigger 3 has the slot 41 therein, the trigger is urged forwardly to let the pin 40 slide to the rear of such slot, and thereby permitting the cam 42 to slide along the curved end 60 of the cam arm 43, to pass below the cam arm and into the position shown in Fig. 6 as the equilibrium or normal position shown in Fig. 6 is restored after firing impact occurs, and the trigger 3 can now move rearwardly, as another pull may be exerted on the finger arm 53 thereof.

In the cartridge shown in Fig. 2, the bullet 7 has a rim or shoulder 8 on the nose end 9 and this rim 8 shoulders on the internal shoulder 10 in the forward end of the compartment 6 while the nose end 9 extends into the reduced diameter portion 10'. The opposite end 11 of the bullet 7 is of reduced diameter so that the sleeve 12 of substantially the same outer diameter as the central bullet portion 13, may be slid over the bullet end. The sleeve 12 has the closed outer end 14 which has a flange 15 thereon to simulate an actual cartridge rim.

The bullet end 11 has a bore 17 therethrough and the larger bore 18 extends from the bore 17 through the nose 9 of the bullet. The sleeve 12 obviously bears slidably within the reduced diameter portion or guideway 16 of the compartment and is of a length to be spaced out of contact with the central bullet portion 13 when a cap 19 is in place within the sleeve 12 and against the end face 20 of the bullet.

In the modification shown in Fig. 3 the sleeve end 28 has a bore 21 therethrough of a size to

permit the mandrel 22 to extend out of the sleeve while the flange 23 of the mandrel is restrained within the sleeve 12 to bear against the cap 19.

In the modification shown in Fig. 4 the sleeve 25 is either press-fitted or threaded upon the bullet end 11. This sleeve 25 has the slot 26 therein, and is substantially semi-circular, as shown in Fig. 5. In this modification the cap 19 may be dropped into position through the slot 26 while the mandrel flange 23 bears against the cap and the mandrel 22 extends through the bore 21 in the sleeve end 29.

In each form of this invention substantially all of the smoke arising upon the firing of a cap 19 will pass down the bullet bore 17 and out the bullet bore 18. Then, since the bore 27' of the barrel 2' communicates with the opening 3', a substantial part of the smoke will pass down the the bore 27' and out the end of the pistol barrel 27, thereby simulating in a toy pistol the actual firing of a revolver.

Broadly, this invention considers a cartridge structure and a pistol of the revolving cylinder type in which the cartridges may be fired in such a manner that a substantial part of the smoke will pass out through the barrel bore, and in such a manner that a number of cartridges may be first in rapid succession, after which the cartridges may be quickly reloaded with caps and fired again.

What is claimed is:

1. A toy pistol including, a frame having an opening therein, a barrel extending forward from said frame and having a bore therethrough, communicating inwardly with said frame opening, a cylinder adapted to be mounted in said frame to rotate in said opening, a plurality of axially extending compartments in said cylinder open at both ends and equally radially spaced from the axis thereof, a trigger mounted in said frame and adapted upon manipulation to rotate said cylinder to bring a compartment axis is co-axial alignment with the bore of said barrel, each compartment having integrally formed therewith reduced diameter portions at opposite ends thereof to form, respectively, a forward guideway with a rearwardly facing internal shoulder and a rear guideway, a cartridge adapted to fit co-axially in each compartment bore, each cartridge comprising, a bullet having an open axial bore therethrough and a reduced diameter forward end to provide a forwardly facing external shoulder for forward thrust resisting abutment with said internal shoulder and a reduced diameter nose portion for pilot engagement within said forward reduced diameter compartment portion, said bullet extending rearwardly of said rear guideway but within said opening when in seated position upon said internal shoulder, said cartridge also comprising a cap to fit in contact with the rear end face of said bullet and over the bore thereof and a sleeve on the rear end of said bullet to be received within said rear guideway and having means associated therewith at the rear end thereof to bear inwardly against said cap, said pistol including a hammer mounted in said frame and adapted to be actuated by said trigger manipulation to exert an impact upon the outer surface of said sleeve associated means of the cartridge in said co-axially aligned compartment to detonate said cap so that smoke therefrom passes down said bullet bore and said barrel and out the end of said barrel, and so that, after said cylinder has been further rotated, any remainder of smoke passes from said bullet through the re-

duced diameter forward portion of said compartment and out through said opening.

2. In a toy pistol, a frame having an opening therein, a cylinder rotatably mounted within the frame opening and provided with a succession of circumferentially spaced cartridge receiving pockets open at both ends of the cylinder, each pocket having at its rear end a guideway and at its forward end a shoulder and an open-ended guideway of lesser diameter than the diameter of the first mentioned guideway, a cartridge body adapted to fit co-axially in each pocket and comprised of a bullet-like body having an open axial bore therethrough and a reduced diameter nose to pilot in said open-ended reduced guideway and to provide a forwardly facing shoulder to seat against said forward shoulder of the pocket as a stop against forward thrust on said body, a cap retaining cup removably sleeved on the rear of said body and of a diameter to fit said first mentioned guideway of the cylinder pocket, said cup serving to locate a percussion cap against the rear face of the body and over the bore there-

through, and a trigger actuated hammer carried by the frame to strike said cup and thereby fire the cap and operatively connected with the cylinder to rotate the cylinder for successively bringing cylinder pockets into alignment with the path of hammer stroke.

TALLEY W. NICHOLS.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,902,708	Keyston	Mar. 21, 1933
1,965,637	Frederich	July 10, 1934
2,098,068	Skinner	Nov. 2, 1937
2,539,968	Payne	Jan. 30, 1951

FOREIGN PATENTS

Number	Country	Date
139,773	Germany	Apr. 3, 1903
164,655	Germany	Nov. 3, 1905
282,029	Germany	Feb. 13, 1915