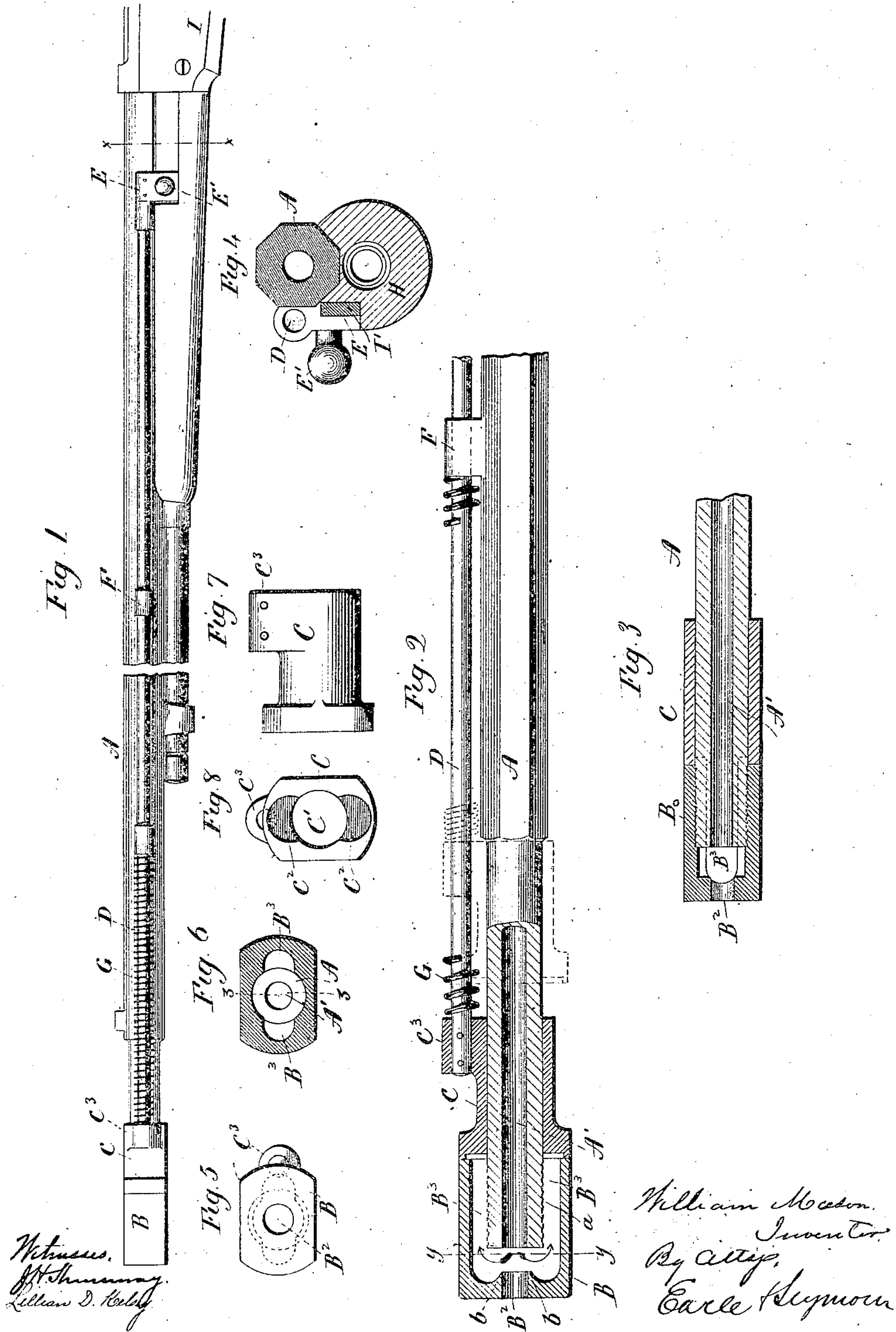


(No Model.)

W. MASON.
GAS OPERATED GUN.

No. 525,151.

Patented Aug. 28, 1894.



UNITED STATES PATENT OFFICE.

WILLIAM MASON, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
WINCHESTER REPEATING ARMS COMPANY, OF SAME PLACE.

GAS-OPERATED GUN.

SPECIFICATION forming part of Letters Patent No. 525,151, dated August 28, 1894.

Application filed September 22, 1893. Serial No. 486,172. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MASON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Automatic Guns; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same,
10 and which said drawings constitute part of this specification, and represent, in—

Figure 1, a view in side elevation of one form which an automatic gun constructed in accordance with my invention may assume;
15 Fig. 2, an enlarged reverse view of the gun partly in horizontal section and partly in elevation; Fig. 3, a view in vertical longitudinal section of the forward end of the gun on the line $z-z$ of Fig. 6; Fig. 4, an enlarged view
20 of the gun in vertical transverse section on the line $x-x$ of Fig. 1; Fig. 5, a view of the gun in front elevation, showing the gas-deflector, the gun-barrel and the lug of the slide; Fig. 6, a view in vertical section on the line
25 $y-y$ of Fig. 2 through the gas-deflector and gun-barrel; Fig. 7, a detached reverse plan view of the slide; Fig. 8, a detached view thereof in front elevation.

My invention relates to an improvement in
30 that class of automatic guns in which the gases of explosion are utilized for making the action of the gun automatic, the object of my present invention being to produce a simple, compact and reliable gun of the character
35 described, which shall contain few parts, and not be liable to derangement.

With these ends in view, my invention consists in a gas-deflector, attached to the forward end of the gun-barrel, and projecting
40 beyond the same, and adapted to deflect the gases issuing from the mouth of the gun-barrel backward, a slide mounted on the gun-barrel in position to be impinged upon and moved rearward by the gases deflected, and
45 an operating-rod connected with the said slide at its forward end, and at its rear end with the feeding and firing mechanism of the gun.

My invention further consists in certain details of construction and combinations of
50 parts as will be hereinafter described and pointed out in the claims.

In carrying out my invention as herein shown, I construct the extreme outer end or muzzle of the gun-barrel A, with external
screw-threads a , adapting it for the attach- 55
ment of a gas-deflector B, which is constructed with an interiorly threaded opening B' , entering it from its rear end, and adapting it to be screwed over the threaded outer end of
the gun-barrel. 50

The forward end of the deflector is provided with a short longitudinal opening or passage B^2 , which is arranged in alignment with the bore A' , of the gun-barrel, than which it is a trifle larger. The said deflector 65
is constructed with two gas-passages $B^3 B^3$, located opposite each other, and extending at their forward ends beyond the extreme outer end of the gun-barrel, merging as it were into the rear end of the opening or bore B^2 , before 70
mentioned, but extending a little forward beyond the said end of the bore, whereby two pointed or beveled deflecting edges $b b$, are formed. These edges stand substantially in front of the bore of the gun, and deflect the 75
expanding gases of explosion outward, and then rearward through the passages which are open at their rear ends. The said passages intersect the threaded bore B' of the deflector, as clearly shown in Fig. 6 of the 80
drawings, so that the internal threads of the said opening are interrupted, and only take into the threads a , of the gun-barrel at points between the passages.

As herein shown the deflector is made ob- 85
long in transverse section, and arranged horizontally, as shown in Figs. 5 and 6 of the drawings. That form provides room for the gas passages, and is light.

Immediately in rear of the rear end of the de- 90
flector, I locate a slide C upon the gun-barrel, on which it is free to slide back and forth within limits. This slide is provided with a central opening C' , adapting it to fit over the gun-barrel, and at its forward end with two shall- 95
ow recesses $C^2 C^2$, arranged to register with the open, rear ends of the gas-passages $B^3 B^3$ of the gas-deflector, the said recesses being located on opposite sides of the opening C' . The said slide is also constructed with a lug 100
 C^3 , for the attachment of the forward end of the operating-rod D, the rear end of which is

secured to the forward end of an action-bar E, constituting a member of the feeding and firing mechanism of the gun, said mechanism being of any approved construction, and too well known to need special description or illustration herein.

The gun-barrel, as shown by Figs. 1 and 2 of the drawings, is provided with a bearing F, for the rod to play through. A spiral operating spring G, interposed between the rear end of the lug C³, and the forward edge of the said bearing F, exerts a constant effort to keep the forward end of the slide in engagement with the rear end of the gas-deflector, and operates to restore the slide to its normal position after it has been pushed backward by the deflected gases of explosion.

As herein shown the gun-barrel is made polygonal throughout the main portion of its length, its forward end upon which the gas deflector and slide are mounted, being rounded. I conceive that to be the best construction, but do not limit myself to it. The bar is provided with an operating handle E', by means of which the gun is fired manually. The forward end of the said arm or slide plays in a recess formed in the stock H, of the gun, while its rear end enters the receiver I of the gun in the usual manner, for operating the breech-mechanism, which may be of any approved construction, and does not require description or illustration.

It will be readily understood that the gun having once been fired manually, the gases of explosion will issue from the mouth of the gun-barrel, and being deflected rearward by the gas deflector, will force the slide backward against the tension of the operating spring, and thus move the operating-rod and the action bar E, backward, whereby the feeding and firing mechanism is partially operated. The spring now reasserts itself, and completes the operation of the said mechanism, and another cartridge is discharged. The last action of the gun is automatic, and its automatic action will be continued as long as the gun is supplied with cartridges, and as long as the trigger is prevented from restraining the firing hammer at the conclusion of the rearward movement of the operating-rod,

for every time a cartridge is exploded, a portion of the gases of explosion will be deflected rearward, with the effect of pushing back the slide and rod.

It is apparent that in carrying out my invention, the details of the construction of the gas-deflector and slide may be varied, and I would therefore have it understood that I do not limit myself to the exact construction shown and described but hold myself at liberty to make such variations therein as may fairly fall within the spirit and scope of my invention. I am aware, however, that automatic guns operated by the gases of explosion are not new, and that it is not new to take the said gases from the mouth of the gun-barrel, and I do not claim such a construction broadly.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An automatic gun, having a gas-deflector secured to and projecting beyond the muzzle of the gun-barrel, and adapted to deflect a portion of the gases of explosion rearward, a slide mounted upon the gun-barrel, and arranged to be impinged upon by the deflected gases of explosion, and connection between the said slide and the feeding and firing mechanism of the gun, substantially as described.

2. An automatic gun, having a gas-deflector attached to and projecting beyond the muzzle of the gun-barrel, and constructed with a passage located in line with the bore of the gun, and with two gas-passages extending at their forward ends beyond the muzzle of the gun, and open at their rear ends, a slide mounted upon the gun-barrel and engaging at its forward end with the rear end of the deflector, and means for connecting the said slide with the feeding and firing mechanism of the gun, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM MASON.

Witnesses:

FRED C. EARLE,
GEORGE D. SEYMOUR.