

May 27, 1930.

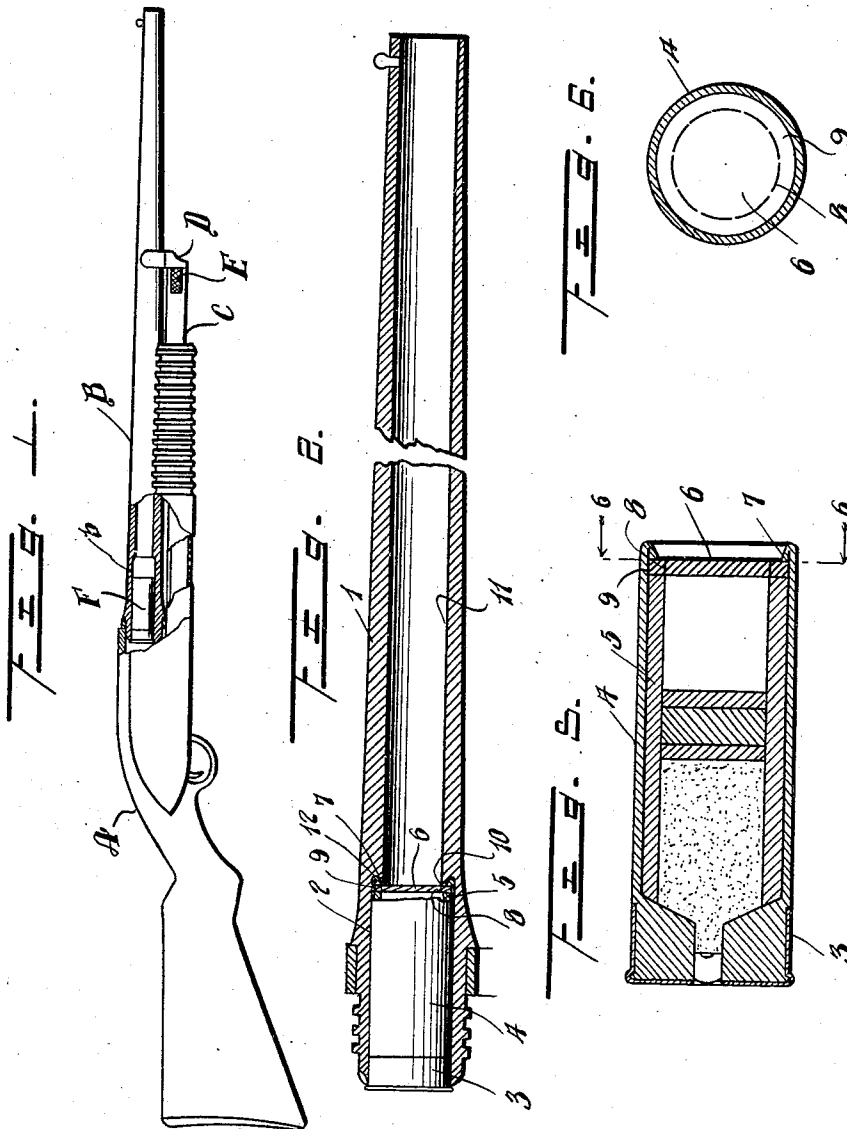
E. A. WILLIAMS

1,760,731

INTERCHANGEABLE BARREL FOR GUNS

Filed Nov. 1, 1928

2 Sheets-Sheet 1



Inventor
E. A. Williams.

By *A. F. Randolph Jr.*

Attorney

May 27, 1930.

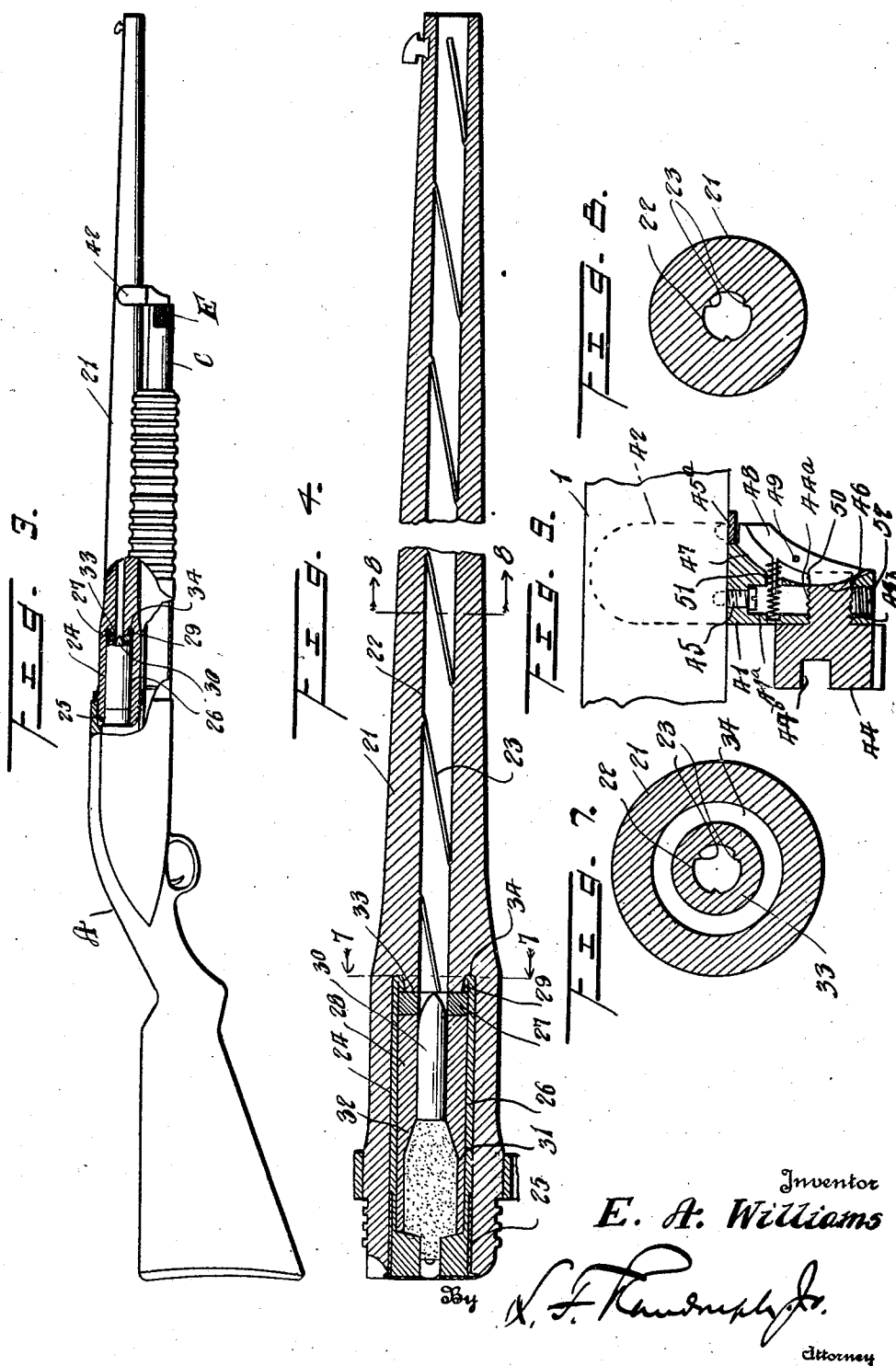
E. A. WILLIAMS

1,760,731

INTERCHANGEABLE BARREL FOR GUNS

Filed Nov. 1, 1928

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

EDGAR A. WILLIAMS, OF UPPER BLACK EDDY, PENNSYLVANIA

INTERCHANGEABLE BARREL FOR GUNS

Application filed November 1, 1928. Serial No. 316,481.

The invention relates to firearms of the shot gun type and has for its principal object the provision of means whereby barrels of smaller caliber than the barrel provided for the firearm originally may be installed on the stock and use the same caliber of cartridges the cartridges being modified to provide for ammunition therein suitable to the caliber of the barrel.

A further object of the invention is the provision of interchangeable barrels for shot guns of smaller caliber than the barrel originally provided for the gun, the smaller calibered barrels having a chamber for the cartridge corresponding in caliber to the chamber at the breech of the original barrel, a shoulder being provided at the breech end of the bore of the smaller calibered barrel with a circumferential groove to receive the crimped edge of the cartridge, said shoulder engaging a ring-like wad in the cartridge with an opening corresponding to the gauge of the barrel, said shoulder holding the ring-like wad in position in the cartridge when fired.

A further object of the invention is the provision of means by which the magazines of firearms are interchangeable.

The invention will be described in detail hereinafter and will be found illustrated in the accompanying drawings, in which

Figure 1 is a side view partly broken away and in section showing a shot gun of the type in which the interchangeable barrels are adapted to be mounted,

Figure 2 is a longitudinal sectional view of a shot gun barrel of a smaller gauge than the gauge of the barrel shown in Figure 1 and adapted to be used interchangeably therewith, the figure being on an enlarged scale,

Figure 3 is a view similar to Figure 1 showing a rifle barrel in position on the stock of the gun shown in Figure 1,

Figure 4 is an enlarged sectional view taken longitudinally of the barrel of Figure 3,

Figure 5 is a longitudinal sectional view of the cartridge adapted to be used in connection with the barrel of Figure 2,

Figure 6 is a transverse sectional view on

a plane indicated by the line 6—6 of Figure 5,

Figures 7 and 8 are transverse sectional views taken on the planes indicated by the lines 7—7 and 8—8, respectively, of Figure 4, and

Figure 9 is a sectional detail of the improved means for holding the magazine plug in position on the barrel shown in Figures 1, 2, 3 and Figure 4.

In the drawings similar reference characters are used to designate corresponding parts throughout the several views.

In Figure 1 is shown a shot gun of the Remington repeating type, model 10—A, that has a stock A, barrel B, and a magazine C having its forward end secured to a barrel lug D, E indicating the lever for securing the magazine on the barrel lug D in the usual manner. The breech end of the barrel B is provided with a chamber b to receive a cartridge F.

In Figure 2 is shown a sub-caliber barrel that is adapted to replace the barrel B in Figure 1, said barrel being designated 1 and having a chamber 2 to receive a cartridge 3 that is of the same caliber as the cartridge F in Figure 1, said cartridge being shown in detail in Figures 5 and 6, and includes a shell 4, 5 designating the reducing sleeve of the shell to reduce the bore of the shell for the ammunition to the bore of the barrel 1, and 6 indicates a wad held in position in the end of the shell by crimping the edges of the shell as shown at 7 to engage the edges of the wad. Said wad 6 is provided with a circular weakened portion 8 forming an annular outer portion 9 that is engaged by the crimped edge 7 and engages the outer end of the sleeve 5 to hold it in position. The barrel 1 is provided with a shoulder 10 at the breech end of the bore 11 that also engages the annular portion 9 of the wad 6 and said shoulder 10 is provided with an annular groove or recess 12 to receive the crimped edge 7 of the cartridge 3. It will be understood that when the barrel 1 is fitted in the stock A the cartridges used therefor are of the type shown in Figures 5 and 6 and as the sleeve 5 reduces the caliber of the cartridge to correspond to the caliber

of the barrel and when the cartridge is placed in the chamber 2 the shoulder 10 by engaging the annular portion 9 of the wad will hold said annular portion 9, the central portion of the wad being driven out of the cartridge by the explosion thereof in the usual manner and that the groove 12 by receiving the crimped end 7 of the shell permits the shoulder 10 to engage said annular portion 9.

In Figures 3 and 4 is shown a rifle barrel replacement for the firearm shown in Figure 1, the rifle barrel being designated 21 and having its bore 22 provided with spiral ribs 23 that are angular in cross section as clearly shown in Figures 7 and 8. In the breech end of the barrel 21 is provided a chamber 24 for a cartridge 25 having a shell 26 corresponding to the shell 4 of cartridge 3 and an annular wad 27 that holds the sleeve 28 in the cartridge, said wad 27 being engaged by a crimped edge 29 of the shell, 30 designating the projectile within the sleeve 28, and 31 a powder chamber at the rear of the projectile 30 that is enlarged as shown, the bore of the sleeve 28 being provided with an inclined shoulder 32 at the forward end of the powder chamber 31 to direct the force of the explosion of the powder against the projectile 30. The breech end of the bore of the barrel 21 is provided with a shoulder 33 that engages the wad 27, and is formed with an annular recess or groove 34 to receive the crimped end 29 of the shell 24. The invention further contemplates the provision of an improved means for securing the forward end of the magazine to the barrel of the firearm and comprising the device shown in Figure 9 in detail in which is provided a lug 41 having a yoke member 42 adapted to engage around the barrel 1, as shown in the drawings, or around the barrel 21, said lug being provided with an opening 43 to permit access to a screw 45 engaging the barrel 1 and with the stop 45^a limiting the movement of the lug 41 toward the muzzle of the barrel. Lug 41 is also provided with a threaded opening 41^b to receive a threaded extension 44^a on the magazine plug 44 that engages in the magazine C and is provided with a recess 44^b to receive the conventional locking lever E. The end of the reduced portion 44^a is provided with a transverse slot 46, and the lug 41 is provided with a slot 47 that is in alinement with the slot 46 when the plug 44 is in place that is designed to receive a latch member 48 that is pivotally secured therein as shown at 49 and having a head 50 that engages in the slot 46 and is held in engagement therewith by means of a coil spring 51. By this structure the plug 44 may be removed from the lug 41 by releasing the latch 48, which ordinarily conforms to the outer surface of the lug, by inserting a small coin, such as a dime against the up-

per end thereof, and the plug 44 may be secured in another lug 41 of the same construction secured to another barrel for interchangeability of the magazine. 52 indicates a screw plug that is mounted in the outer threaded end of the opening 41^a and is replaced when the threaded bore 41^b is formed so that the end of said plug 52 is threaded to conform to the threads of the reduced extension 44^a thus forming a bearing for said extension 44^a, and the plug 52 is not removable while the plug 44 is in position in the lug 41. If desired the plug 52 may be substituted by a sling strap attachment having a plug conforming to the threaded plug 52 (not shown).

It will be understood that the invention applies to shot guns of 12, 16 and 20 gauge, and in fact to any gauge shot gun, the invention not being limited to any particular gauge of gun barrel for which the piece may be manufactured.

What is claimed is:—

1. In a firearm of shot gun type, interchangeable barrels of varying calibers, said barrels having chambers of uniform diameters to receive cartridges of uniform caliber, the barrel of smaller caliber being provided with an annular recess surrounding the breech end of its bore to receive the crimped end of a cartridge.

2. In a firearm of shot gun type, interchangeable barrels of varying calibers, said barrels having chambers of uniform diameters to receive cartridges of uniform calibers, a shoulder provided in a barrel of smaller caliber surrounding the breech end of the bore adapted to engage a wad in the cartridge, and said shoulder having an annular recess to receive the crimped end of the cartridge.

3. In a firearm of shot gun type, interchangeable barrels of varying calibers, said barrels having chambers of uniform diameters to receive cartridges of uniform calibers, a barrel of smaller caliber having a shoulder surrounding the breech end of the bore adapted to engage an annular wad in a cartridge in the chamber and hold it in the cartridge, and the shoulder having an annular recess to receive the crimped end of the cartridge.

4. In a firearm of shot gun type, interchangeable barrels of varying calibers, said barrels having chambers of uniform diameters to receive cartridges of uniform calibers, a barrel of smaller caliber having a shoulder surrounding the breech end of the bore, a wad for a cartridge having a weakened line to aline with the wall of the bore and providing an annular portion engaging said shoulder for retention within the cartridge shell, and the shoulder having an annular groove therein to receive the crimped end of the cartridge.

5 5. A firearm barrel having a bore of one gauge and a chamber at the breech of said barrel for a shell of larger gauge than the gauge of the bore, and a shoulder in the barrel surrounding the breech end of the bore adapted to engage a wad in a shell.

10 6. A firearm barrel having a bore of one gauge and a chamber at the breech of said barrel for a shell of larger gauge than the gauge of the bore, and a shoulder in the barrel surrounding the breech end of the bore adapted to engage a wad in a shell and having an annular groove therein of the same outside diameter as the diameter of the chamber and adapted to receive the end of the shell projecting beyond the wad.

15 In testimony whereof I affix my signature.
EDGAR A WILLIAMS.

20

25

30

35

40

45

50

55

60

65