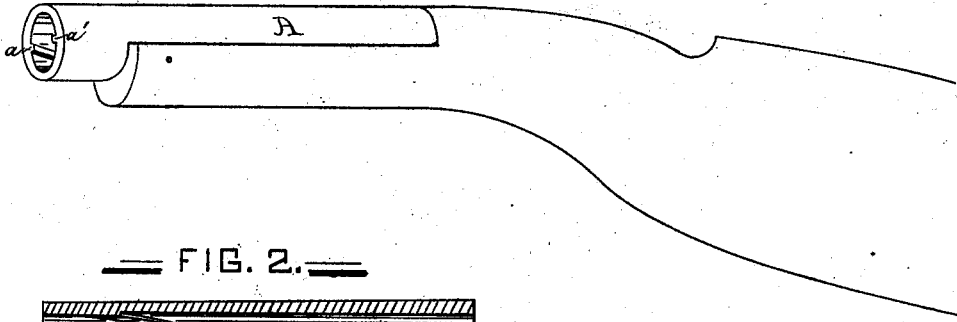


W. LITTLEJOHN.
Rifle-Barrels.

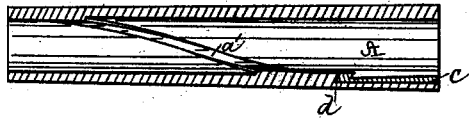
No. 198,033.

Patented Dec. 11, 1877.

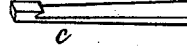
== FIG. 1. ==



== FIG. 2. ==



== FIG. 3. ==



== FIG. 4. ==

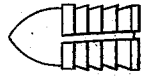
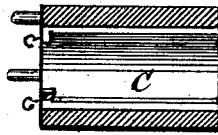


Fig. 5.



WITNESSES.

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WILLIAM LITTLEJOHN, OF JEFFERSON, TEXAS.

IMPROVEMENT IN RIFLE-BARRELS.

Specification forming part of Letters Patent No. **198,033**, dated December 11, 1877; application filed March 12, 1877.

To all whom it may concern:

Be it known that I, WILLIAM LITTLEJOHN, a resident of the town of Jefferson, county of Cass and State of Texas, have invented a certain new and useful Improvement in Fire-Arms; and I do hereby declare the following to be a full, clear, and correct description of the same, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 is a perspective view of a gun, the barrel of which is provided with two guides or ribs. Fig. 2 is a longitudinal sectional view of a breech-loader provided with my improvement. Fig. 3 is a perspective view of one of the cutters or plows. Fig. 4 illustrates a projectile with grooves as made by the cutters or plows. Fig. 5 is a longitudinal section of the detachable muzzle-piece, designed to be used with muzzle-loaders.

The nature of my invention consists in providing a gun-barrel with a number of cutters or plows for grooving the ball, said cutters or plows to correspond with the number of guides or ribs with which the gun-barrel is formed, as more fully hereinafter described.

The construction and operation of my invention are as follows:

The barrel A is first bored perfectly smooth and of a uniform diameter, after which the guides or ribs *a a'* are formed by means of a tool somewhat similar to that used in grooving rifles. A chamber is next made in the

rear of the barrel for the reception of the cartridge, by cutting out the guides or ribs, say for a distance of two or three inches, and in producing in lieu thereof a like number of grooves, in which are fitted the cutters or plows *c*. These cutters or plows abut against the ends of the guides or ribs *a a'*, as shown at *d*, Fig. 2, so that they may groove the ball as it is driven forward to follow the guides or ribs *a a'*.

The foregoing description applies to breech-loaders.

When my invention is to be used with muzzle-loaders the guides or ribs *a a'* should extend the whole length of the barrel, and the ball grooved by forcing it through a detachable muzzle-piece, C, Fig. 5, of similar bore to that of the gun, and provided with cutters or plows *c* for said purpose.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A gun-barrel provided with cutters or plows *c* for grooving the ball, substantially as described.

2. In a gun-barrel, the cutters or plows *c*, in combination with the guides or ribs *a a'*, substantially as described.

In testimony whereof I have hereunto set my hand.

W. LITTLEJOHN.

In presence of—

J. C. HUBBELL,
ARTHUR BARBARIN.