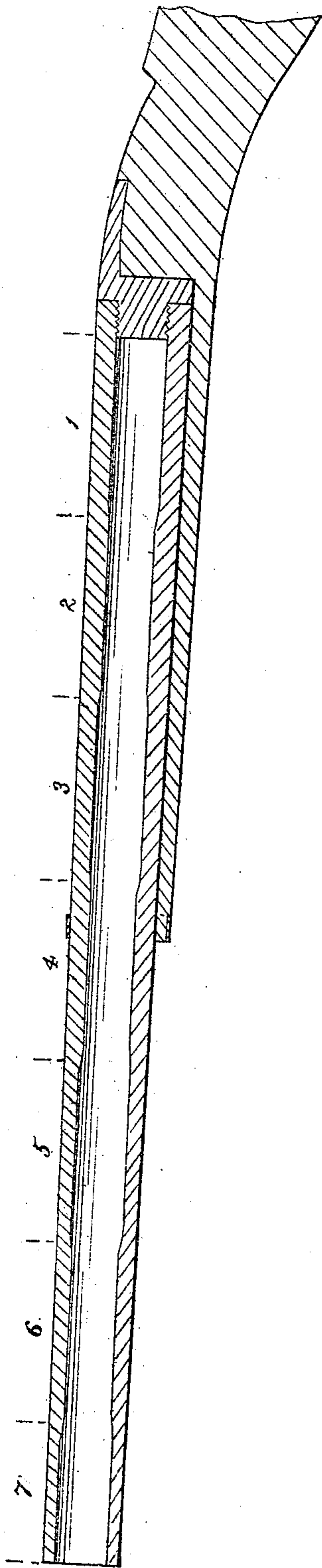


*Buchel & Dorsch,  
Rifling*

*No. 14,597*

*Patented April 8, 1856*



# UNITED STATES PATENT OFFICE.

GEO. BUCKEL AND E. DORSCH, OF MONROE, MICHIGAN.

## IMPROVEMENT IN SHOTGUNS.

Specification forming part of Letters Patent No. 14,597, dated April 8, 1856.

*To all whom it may concern:*

Be it known that we, GEORGE BUCKEL and EDWARD DORSCH, of Monroe, in the county of Monroe and State of Michigan, have invented a new and useful Improvement in Shotguns; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, which represents a longitudinal central section of the barrel of a gun constructed according to our invention.

This invention consists in giving the bore of the gun the undulating form described as follows, for the purpose of preventing the scattering of the shot to too great a degree.

We divide the length of the bore into an odd number of parts—say five, seven, or nine, (5, 7, or 9,) according to the length of the barrel—and make the said parts alternately of larger and smaller diameter, the parts next the breech and muzzle being of the larger diameter, and the intervening parts smaller and larger alternately, thus producing an undulating bore. To explain this, we have divided the barrel represented in the drawing into seven (7) parts, numbered, respectively, from 1 to 7; and it is visible that the parts of the bore numbered 1, 3, 5, and 7 are of larger diameter than the parts numbered 2, 4, and 6. To produce this undulating form, we first bore the piece truly to the smaller diameter, and then, by an expanding bit, enlarge the other parts to the extent of about one thirty-second ( $\frac{1}{32}$ ) of an inch by means of an expanding bit or other suitable tool, making the enlargement commence and terminate gradu-

ally, so as to leave no ridges. We make the parts from 1 to 6, inclusive, commencing at the breech, of about equal length; but the part numbered 7, which is next the muzzle, we make about three-fourths ( $\frac{3}{4}$ ) of the length of the other parts, so as to leave a wide muzzle.

We enlarge the part 1, next the breech, rather more than the other parts, to admit of its being made slightly conical, largest next the breech, to give greater force to the charge and greater range to the gun. This undulating form of the bore is found by repeated experiments to be infallible in preventing the shot scattering too much, and to cause at least about two-thirds of the shot to be carried to the mark.

In pieces whose barrels are of ordinary length and size of bore we find that the division into seven (7) parts answers better than any other number; but in pieces whose barrels are shorter or longer in proportion to the bore we divide them into five (5) or nine (9) parts—always an odd number—so as to bring one enlargement at the muzzle and another next the breech.

We do not confine ourselves to any particular number of divisions of the bore; but

What we claim as our invention, and desire to secure by Letters Patent, is—

Giving the bore the undulating form substantially as herein described.

GEORGE BUCKEL.  
EDWARD DORSCH.

Witnesses:

CASIMIR WALLDORF,  
JOHN P. SCHLÜTER.