

H. M. QUACKENBUSH.
PROJECTILES FOR AIR-GUNS.

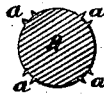
No. 173,341.

Patented Feb. 8, 1876.

Fig. 1.



Fig. 2.



Witnesses
W. C. Chaffee
Geo. Bacon

H. M. Quackenbush.
J. Curtis. Atty.

UNITED STATES PATENT OFFICE.

HENRY M. QUACKENBUSH, OF HERKIMER, NEW YORK.

IMPROVEMENT IN PROJECTILES FOR AIR-GUNS.

Specification forming part of Letters Patent No. **173,341**, dated February 8, 1876; application filed December 21, 1875.

To all whom it may concern:

Be it known that I, HENRY M. QUACKENBUSH, of Herkimer, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Slugs or Projectiles for Air Guns or Pistols, of which the following is a specification:

In the manufacture of air guns or pistols (which are smooth-bored generally) the great nicety which is observed in the manufacture of fire-arms to preserve a uniform diameter of bore is not considered imperative, and the small sum for which the first are sold will not permit of the expenditure of time and care requisite to obtain perfect uniformity.

The purpose of my present improvement is twofold—first, to provide a slug or projectile for air pistols or guns which shall adapt itself to slight variations in the diameter of the bore of the barrel in which it is inserted, and exert sufficient friction in the latter to retain itself in place therein until expelled by the force of the escaping air; and, secondly, to compensate for the increased diameter of the body of the slug which results from the wear and consequent enlargement of the matrix of the dies in which the slugs are formed, and enable the dies, which are expensive, to be used for a much longer time than heretofore.

My improvement consists in forming upon the periphery of the slug a series of shallow ribs or burrs, which, in the event of the bore of the barrel being less in diameter than their aggregate outer edges, will flatten down upon being inserted within such bore; but, if the bore is equal in diameter to such edges, or nearly so, the edges of the ribs will, without flattening of the latter, exert sufficient friction within the barrel to prevent escape of the slug.

The drawings accompanying this specification represent, in Figure 1, a side elevation, and in Fig. 2 a cross-section, of a slug embodying my improvements.

In these drawings, A represents the body of a slug or projectile, which, in the present instance, is a pointed cylindrical bolt, formed from lead or other soft and ductile metal suitable for the purpose. Upon the periphery of the body A, I create a series of thin

shallow ribs or burrs, *a a*, &c., which, from the nature of the metal and their small size, are easily crowded downward toward, or flattened to or upon, the periphery of said body A.

These ribs *a* may extend longitudinally of the slug, as shown in the accompanying drawings, or spirally or obliquely to the axis of the slug, as circumstances may determine best, as I do not confine myself to the disposition or number of such ribs.

The method of manufacturing these slugs is by compression within or between steel dies, which dies are difficult and expensive to produce, and which, in a comparatively short time, become worn to such an extent that the diameter of the slug made by them is too large to be inserted within the barrel, and they are useless.

By the use of the ribs *a* I am enabled to begin with dies of smaller bore than that of the barrel, as such ribs compensate for the discrepancy, while, as the dies become worn, and the body of the slug enlarged, the ribs will flatten down to a greater or less extent when inserted within the barrel.

I am thus enabled to greatly prolong the service of the dies, and in so doing carry out one feature of these improvements.

The ribs *a* also, as before stated, adapt the slug to such slight variations as would naturally exist in the bore of the tube from which barrels are made, as with the largest bore the ribs would stand out nearly or quite intact and fill it, while with a smaller bore such ribs would be lessened or compressed and flattened to a greater or less extent.

I claim—

A slug for air pistols or guns, composed of a suitable body, upon the periphery of which a series of thin ribs or burrs are created, the metal composing the burr, or the entire slug, being of such a soft or ductile nature that the said burrs are susceptible of being readily compressed or flattened, to a greater or less degree, upon being inserted within the bore of the barrel, and adapt themselves to the latter, substantially as and for the purposes stated.

HENRY M. QUACKENBUSH.

Witnesses:

J. A. STEELE,
EZRA SMALL.