

H. M. QUACKENBUSH.

Air-Gun Darts.

No. 159,354.

Patented Feb. 2, 1875.

Fig. 1.

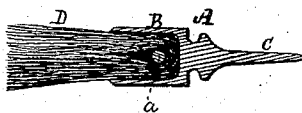


Fig. 2.



Fig. 3.



WITNESSES.

*F. Lunnell.*  
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# UNITED STATES PATENT OFFICE.

HENRY M. QUACKENBUSH, OF HERKIMER, NEW YORK.

## IMPROVEMENT IN AIR-GUN DARTS.

Specification forming part of Letters Patent No. 159,354, dated February 2, 1875; application filed November 11, 1874.

*To all whom it may concern:*

Be it known that I, HENRY M. QUACKENBUSH, of Herkimer, Herkimer county, New York, have invented a new Manufacture of Air-Gun Darts and other articles, of which the following is a specification:

The drawings accompanying this specification represent, in Figure 1, a longitudinal section, and in Fig. 2 a cross-section, of a dart embodying my improved construction. Fig. 3 represents a modification in cross-section of my invention, to be hereinafter explained.

My invention consists of an air-gun dart having a plug, pin, or other object, of metal or a sufficiently hard material, within the tube, which constitutes part of the dart, and inserting between such plug and the inner periphery of such tube the strands of silk, bristles, or other material of which the tuft of the dart, or the body of a brush, &c., may be composed, the result being that the plug or core, being driven with great force into the tube, securely retains the tuft or bristles therein by friction or compression.

In these drawings, A represents the metallic portion or head of the dart, consisting of a tubular body, B, and a pointed head, C, after the ordinary manner of producing such articles. The tuft of fibrous material which steadies the motion of the projectile is shown at D, and it is to the method of securing this tuft to or within the body of the dart that my invention relates.

Heretofore a cord or thread has been wound about one end of this tuft, and it has then been

secured within the tube B by shellac or other cements; and, as a consequence, it frequently became detached.

In carrying out my invention, I procure a quantity of fibrous material of sufficient amount as, when doubled, to tightly fill the tube B, and of a length double that heretofore used, and I double this material, and inclose within the bend or fold a small pin, *a*, or plug of metal or other substance, of a length or size equal to, or about so, of the inner diameter of the said tube B. I then drive the pin transversely into the tube B, and down to, or nearly, its bottom, the fibrous material being, as a consequence, carried with it, and securely confined in place. The length of the pin is such as to require considerable force in driving it to place; and when thus driven it will never be displaced, except by the exertion of great power, and the probable ruin of the dart.

Under the method heretofore practiced individual strands of the tuft become loose and reduced in size, and escape from the tube. By my method of construction single strands cannot escape, and the whole tuft is held firmly in place.

I claim—

An air-gun dart provided with a tuft secured in the tube at the rear end of the dart by a plug or core driven in said tube, as shown and set forth.

H. M. QUACKENBUSH.

Witnesses:

WM. SMITH,  
M. W. RASBACH.