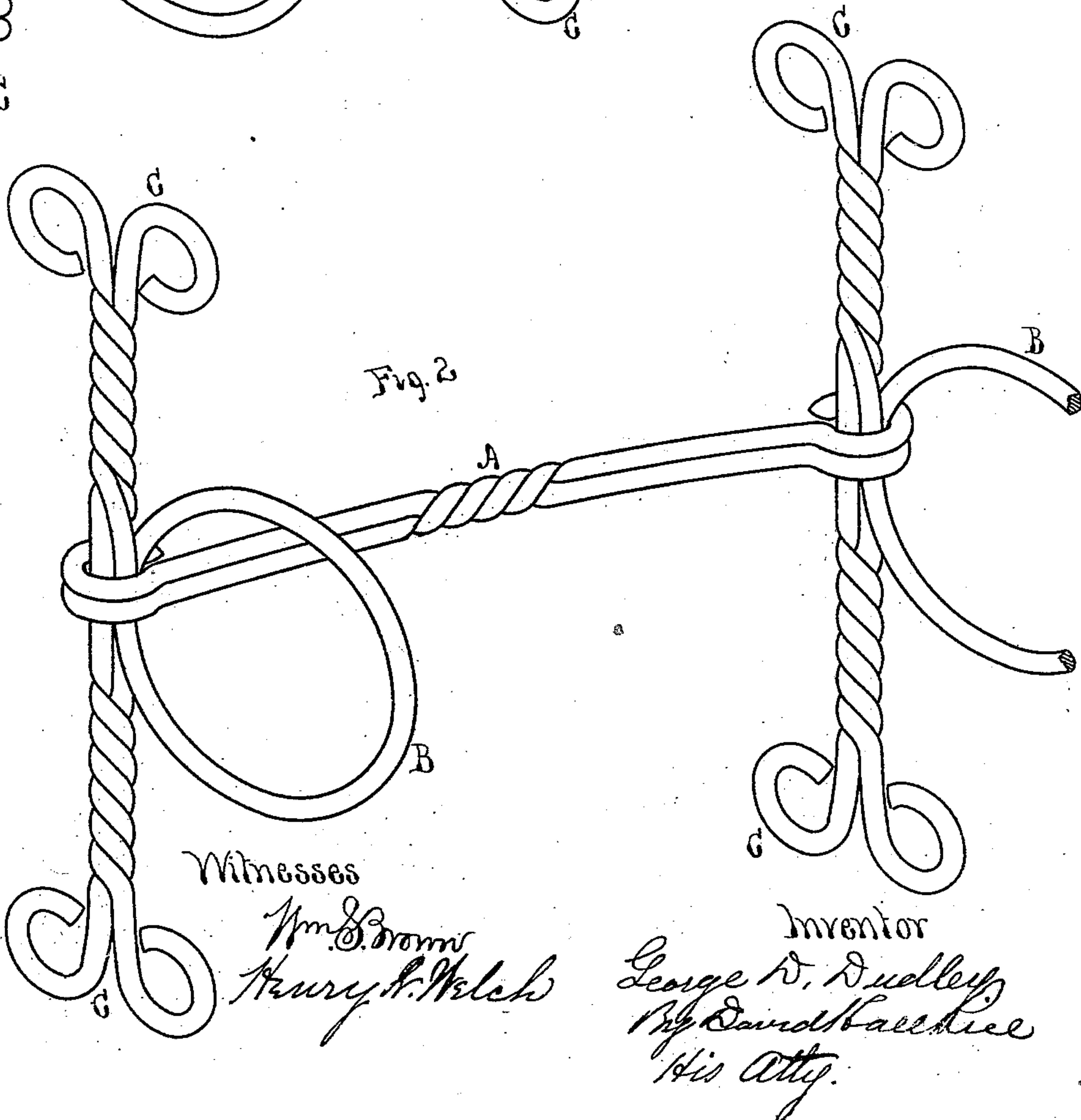
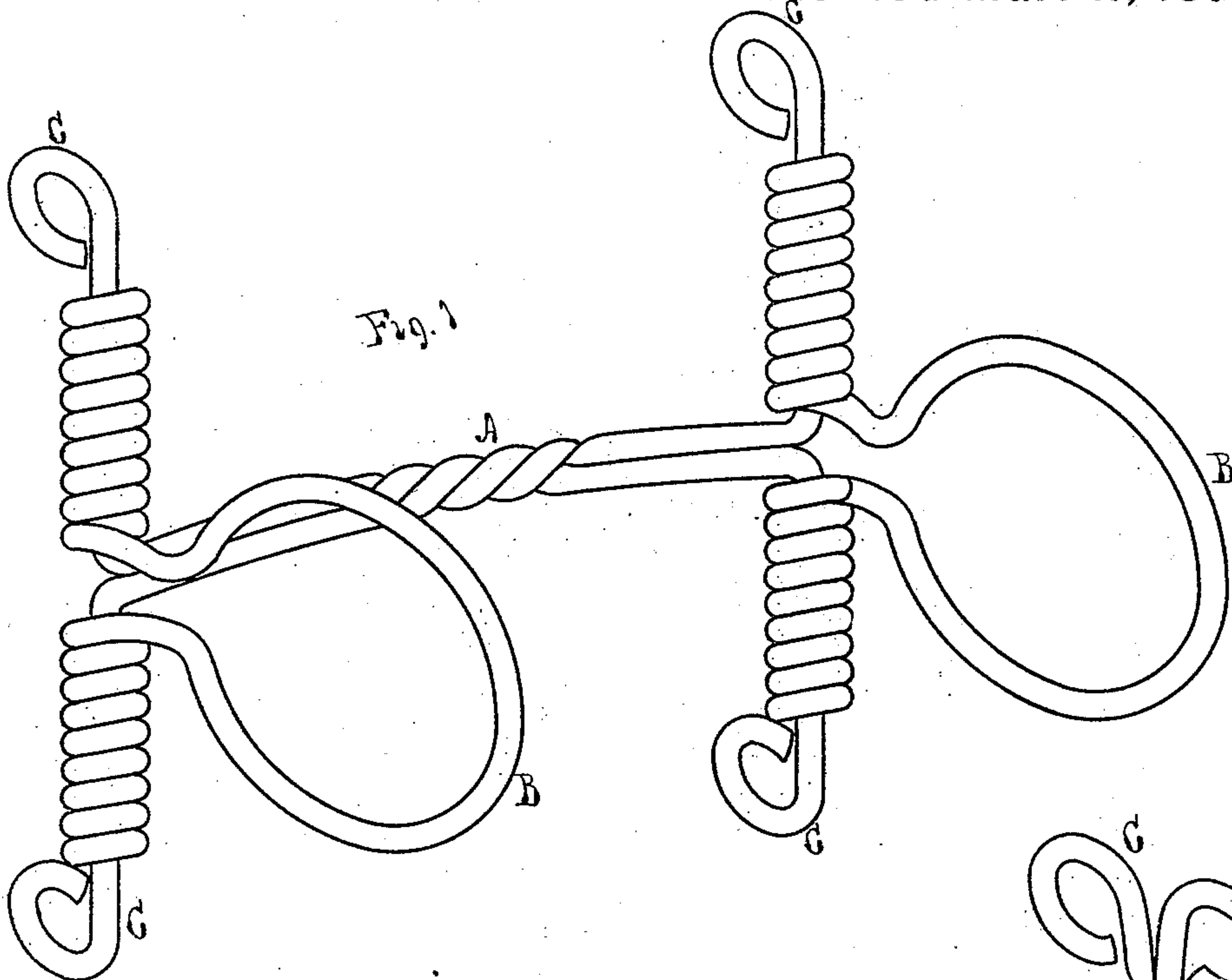


G. D. DUDLEY.  
Bridle-Bits for Horses.

No. 213,099.

Patented Mar. 11, 1879.



Witnesses

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Henry A. Welch

Inventor

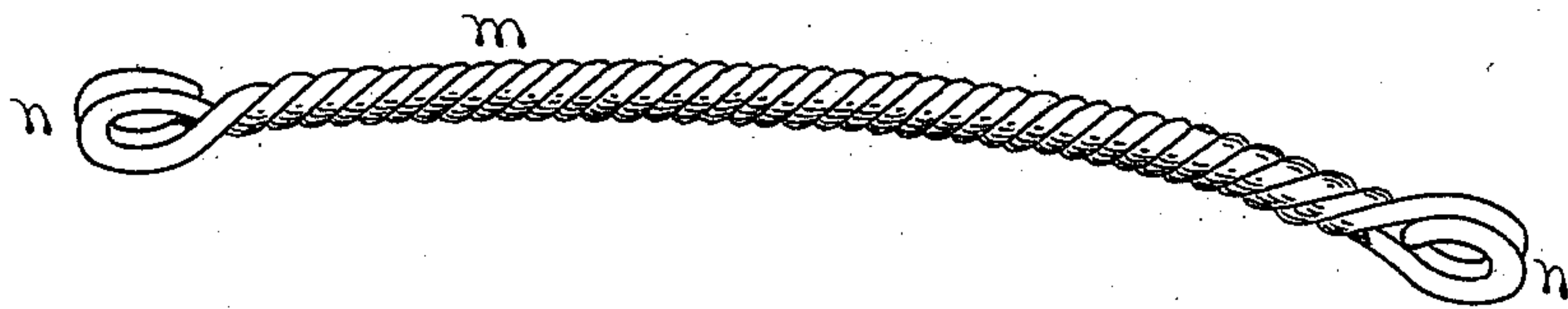
George D. Dudley  
By David H. Rice  
His Atty.

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Fig. 3



Witnesses

*Wm. S. Brown*  
*Henry E. Welch*

Inventor

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# UNITED STATES PATENT OFFICE.

GEORGE D. DUDLEY, OF LOWELL, MASSACHUSETTS, ASSIGNOR TO WOODS,  
SHERWOOD & CO., OF SAME PLACE.

## IMPROVEMENT IN BRIDLE-BITS FOR HORSES.

Specification forming part of Letters Patent No. **213,099**, dated March 11, 1879; application filed  
November 29, 1878.

*To all whom it may concern:*

Be it known that I, GEORGE D. DUDLEY, of Lowell, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Bridle-Bits for Horses, &c., of which the following is a specification:

My improvement is a novel construction of bridle-bits of wire; and consists in uniting the rings, side bars, and mouth-piece by twisting, to obtain the greatest strength of the material, and present a large bearing-surface to the mouth of the animal, and in constructing a mouth-piece of several strands of wire, with eyes for the side bars formed of a strand or strands of the bar carried and twisted back into it.

In the drawings, Figure 1 represents a bit having its cross-bar and side pieces united to the rings in one form. Fig. 2 shows the cross-bar united to the side pieces and rings in another form. Fig. 3 shows a new mode of twisting together a single wire to form loops upon the ends of the mouth-piece of the bit, as hereinafter described.

A represents the bar of the bit, which is designed to pass through the animal's mouth in the ordinary manner. This bar of the bit is formed of two wires, as shown in the drawings, twisted together midway between the side pieces, and so combined as to present a sufficient surface to bear against the mouth of the animal on either side without injury where the pressure of the bit is exerted in use.

While the strands of the bar A are thus united firmly together, they present a more extended surface where the bit bears upon the mouth of the animal than any single wire can be made to do which could be readily or cheaply formed into this part of the bit, while possessing all the requisite strength to prevent any breaking while in use.

In Fig. 1 the two wires at each end of the bit are represented as being bent in opposite directions at right angles to the bar A, forming the ends C C.

The rings B B are shown as formed of a single piece of wire, having its middle part bent into the form of the rings B, and its ends coiled around the parts C C on either side of the bar A, so as to permit of the rings B, with

these coiled ends, swinging or being pivoted on the parts C C.

This construction (shown in Fig. 1) not only serves to keep the strands of the bar A in position adjacent to each other, as shown, at the ends of the bar, but it also presents an extended metallic surface or guard, vertical to the bar A on each end, while it at the same time allows of the automatic adjustment of the rings B B with relation to the bar A in whatever position the latter may be in the mouth of the animal.

By this construction any sudden jerking of the bit sidewise while in use will not cut or injure the mouth of the animal, as would be the case if the single wires C C were thereby brought in contact with it.

In Fig. 2, while the construction of the bar A in its horizontal parts is substantially the same, the ends C are united to the rings B by twisting each end of the wire which forms the rings with the wires C C, and the ends of the wires forming the bar A are clamped loosely around the ends C C through the loops of the rings B.

By this construction the necessary size is imparted to the parts C C, as before, while they are prevented from slipping through the parts of the bar A which are clamped around them, and the whole structure is thus easily and cheaply secured in position with the requisite solidity.

The ends of the wires forming the bar A, Fig. 2, which are clamped around the parts C C, as described, are clasped loosely around them, so as to permit of the requisite automatic adjustment of the rings B B while in use.

When the wires forming the several parts of the bit are bent into shape, as described, they are immersed in a bath of melted tin, and coated with it, to prevent corrosion, as well as to secure the several parts of the wire together in the desired position, where they are stationary with relation to each other.

In Fig. 3 is shown another and novel form of bar or mouth-piece made of wire. M is the part of the bar which passes through the mouth of the animal, and N N are the looped ends, which, in the construction of the bit as a whole, are designed to be bent around the



rings B B and side pieces, C C, as shown in Fig. 2.

This bar M and the loops N N are made of a single piece of wire, one end of which is first bent into a loop. The wire is then carried along a sufficient distance to form the bar M, and is then bent into the loop at the opposite end of the bar M, and carried back and twisted upon itself until the first loop formed is reached, when a second loop is bent in the wire corresponding to the one first made at the end, and the wire is again carried back and retwisted upon itself until the other loop is reached, when the end of the wire adjacent is bent into a corresponding loop.

This construction, as will be seen, forms one strand of each looped end, so as to present no end loop not formed of at least one strand from the bar A continued back into it, and which is not liable to be sprung or bent open and release the rings B B or side pieces, C C, thus rendering the construction of the bit much firmer than when the end loops, N N, are constructed as shown in Fig. 2.

In Fig. 3 these loops and the bar M are shown as disconnected from the rings B B in

order that their construction may be more readily seen.

The advantages of this bit are obvious: it can be easily and cheaply constructed; it possesses all the advantages of bits made, in the usual manner, of cast or wrought iron, while it is stronger and more durable.

What I claim as of my invention is—

1. The bridle-bit composed of the wire bar A and the wire rings B, having twisted arms or side bars, constructed and pivoted together substantially as described.

2. In combination with the end parts, C, the wire rings B, pivoted thereto by their twisted ends, substantially as described.

3. The combination of the wire bar A, the wire rings B, and the twisted-wire ends C, substantially as described.

4. In a bridle-bit, the wire bar M, provided with loops N N, each of which shall consist of one or more strands of the bar carried and twisted back into it, substantially as described.

GEORGE D. DUDLEY.

Witnesses:

DAVID HALL RICE,  
S. C. RICE.