

(No Model.)

E. R. CAHOONE.

BRIDLE BIT.

No. 390,567.

Patented Oct. 2, 1888.



Fig. 5.

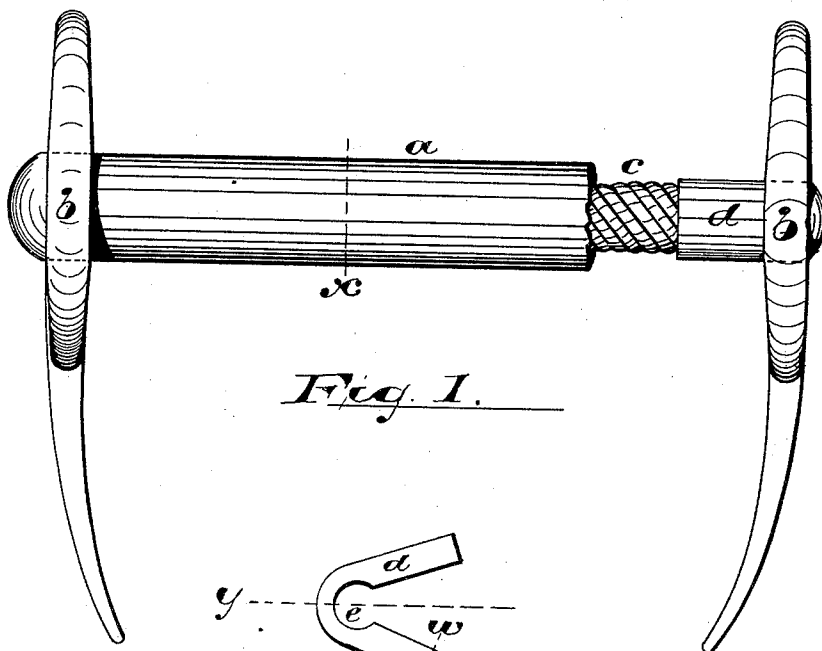


Fig. 1.

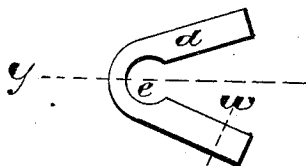


Fig. 2.

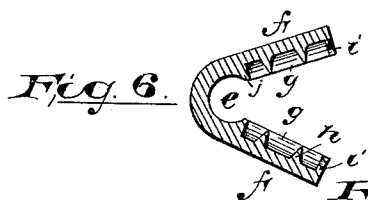


Fig. 6.



Fig. 3.



Fig. 7.

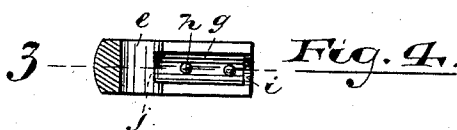


Fig. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWIN R. CAHOONE, OF NEWARK, NEW JERSEY.

BRIDLE-BIT.

SPECIFICATION forming part of Letters Patent No. 390,567, dated October 2, 1888.

Application filed January 16, 1888. Serial No. 260,882. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. CAHOONE, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Bridle-Bits; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

The object of this invention is to reduce the cost of construction and to provide a more durable bridle-bit, preferably of the class of bits provided with vulcanized-rubber coverings on the mouth-pieces.

The invention consists in the improved bridle-bit having the arrangements and combinations of parts, substantially as will be hereinafter set forth, and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures of the drawings, Figure 1 is a plan of the improved bit, showing the mouth-piece covering broken away, and thus illustrating the interior construction thereof. Fig. 2 is a detail view of the head adapted to engage the pivotal pins or bars of the cheek-pieces of the bit and to clamp and hold the ends of a certain core of the mouth-piece. Fig. 3 is a section taken on line X of Fig. 1. Fig. 4 is a section taken through line Y of Fig. 2. Fig. 5 is a view of the mouth-piece core before the same is arranged in the bit. Fig. 6 is a section of the head of the mouth-piece, taken on line Z, Fig. 4; and Fig. 7 is a section of the same, taken on line W, Fig. 2.

In said drawings, *a* indicates the mouth-piece, and *b b* the cheek-pieces of the bit. The latter may be of any suitable construction. Of the mouth-piece, *c* is a core consisting of a rope composed of twisted fibers or strands. Said rope may be, and preferably is, of metallic wire, although I prefer iron wire *c'*, interspersed with steel wires *c''*, the latter to add to the elasticity of the core. Said wires are given a simple twist, as distinguished from twisting

groups or bunches of wires into strands, which are again twisted into rope. After twisting, the wires are dipped in tin at their extremities, and the wires are thus united at their said extremities, as at *c' c'*; but the middle parts are free to work, so that increased flexibility is obtained, and at the same time greater durability.

d d are heads for holding the core to the cheek-pieces, which are adapted to receive bars or pins in said cheek-pieces, being provided with pivotal apertures *e* for that purpose. Said heads are also provided with clamping-arms *f f*, which are longitudinally concaved, as at *g*, to inclose or partly inclose the ends of the wire core and secure a neat covering for the ends of the wires and hold the strands together. The said concaved portions of the arms of the head are provided with inwardly-projecting pins or lugs *h*, which are adapted to enter into or between the twisted fibers and prevent the core from being withdrawn longitudinally from the clamping-arms, the twist in the strands or fiber of the rope serving to prevent such longitudinal movement or withdrawal, as will be understood. The extremities of the arms, on the concaved sides thereof, are provided with ridges *i i* to bite into the rope when the arms are clamped upon the same, and thus additional strength is secured at the union of parts. Said arms are also provided with abutments *j*, which prevent contact of the ends of the wires with the pivotal bar of the cheek-piece and also serve to give added security to the parts.

The arms of the heads when spread apart, as in Fig. 2, are adapted to allow of the ready insertion of the ends of the core, and are thus ready to be pressed upon the said ends, so that the pins will pass into or between the twisted or contorted strands or fibers at points back from the extremities of the core. The heads being clamped upon the tinned wires by a suitable press or dies, the parts are heated and the tin melted, which tin then unites the heads and wire core and gives great strength to the union.

By having the core of wire I am enabled, when the rubber is molded on said core, to have the rubber subjected to the heat employed in the vulcanizing process without damage to

the said core. The said wire also allows of greater resilience than if the rubber covering were alone depended upon for that purpose. However, the use of rubber in connection with ordinary fibrous rope of hemp or similar material would provide sufficient resilience for some purposes.

While I refer to the rope as being of ordinary or simple twist or fiber, it is evident that the said strand may be plaited or braided without departing from the invention.

Having thus described the invention, what I claim as new is—

1. The improved bridle-bit herein described, combining, with the cheek-pieces *b b* and clamping-heads adapted to be compressed to inclose the ends of the rope, a rope of twisted fibers or strands having the ends held in said heads, and a suitable covering, substantially as set forth.

2. The combination, with cheek-pieces *b b*, and heads having pivotal apertures *e* and clamping-arms *f*, provided with pins or lugs adapted to enter between the twisted strands of the rope, of a rope of twisted fiber or strands serving as a core for the mouth-piece and having its ends held in the heads, and a rubber covering for said core and heads, substantially as described.

3. In a bridle-bit, a head combining therein a pivotal aperture, *e*, and concaved clamping-arms adapted to grasp and inclose or partly inclose the mouth-piece core and to hold the same, substantially as set forth.

4. In a bridle-bit, a head combining therein

a pivotal aperture, *e*, and concaved clamping-arms provided with pins or lugs *h*, substantially as and for the purposes set forth.

5. In a bridle-bit, a head having grasping-arms concaved on the inside to receive the rope end and hold the strands together, and ridges at the extremities of the arms to bite into the wire, substantially as and for the purposes set forth.

6. In a bridle-bit, the combination, with cheek-pieces *b b* and heads *d*, having pins *h*, formed in concavities *g*, of a core of twisted wires having tin or solder unions *c'* at their opposite ends and free to work at their center parts, substantially as set forth.

7. In a bridle-bit, in combination with cheek-pieces *b b* and heads *d d*, having an abutment, *j*, and pins *h*, formed in a concavity, *g*, twisted wires having solder or other unions, *c' c'*, at their opposite extremities, substantially as set forth.

8. In a bridle-bit, the combination, with cheek-pieces and a twisted core, of heads having concavities to receive the ends of the core, projections on the inner side of said concavities to enter into holding engagement with said core ends, and an abutment, *j*, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of December, 1887.

E. R. CAHOONE.

Witnesses:

CHARLES H. PELL,
OSCAR A. MICHEL.