(No Model.)

R. W. DAVIS.

Whiffletree and Doubletree.

No. 236,993. Patented Jan. 25, 1881.

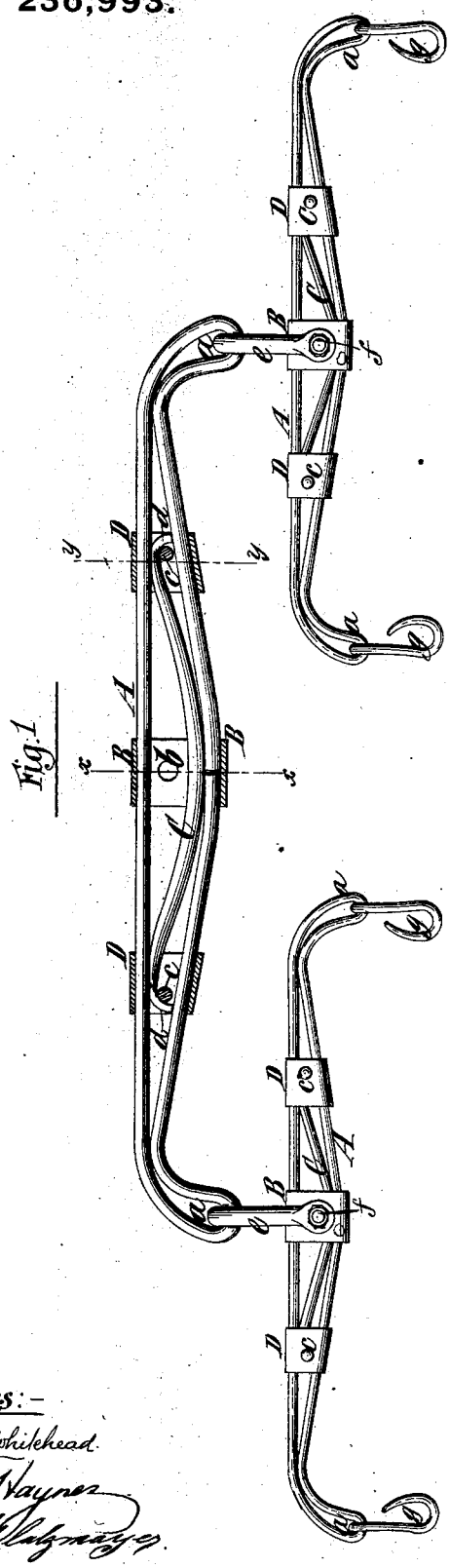


Fig. 1

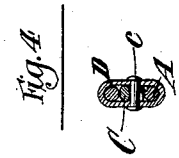


Fig. 4

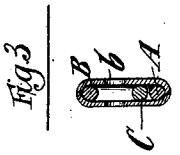


Fig. 3

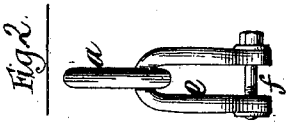


Fig. 2

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UNITED STATES PATENT OFFICE.

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WHIFFLETREE AND DOUBLE-TREE.

SPECIFICATION forming part of Letters Patent No. 236,993, dated January 25, 1881.

Application filed November 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, ROBERT W. DAVIS, of Elmira, in the county of Chemung and State of New York, have invented certain new and useful Improvements in Whiffletrees and Double-Trees, of which the following is a specification.

The object of my invention is to provide strong and light metal whiffletrees and double-trees or eveners, which may be made by bending common iron or steel rods.

To this end the invention consists in a whiffletree or double-tree composed of an iron or steel rod, the end portions of which are bent backward upon the middle portion and brought together at about the middle of the length of the whiffletree or double-tree, so as to form eyes or loops at the ends of the whiffletree or double-tree, and an arched middle portion, and a metal band surrounding the whiffletree or double-tree at the meeting ends of the rod, and preferably having in it a hole for the reception of a draft bolt or pin. I also employ a novel form of brace inserted in the arched middle portion of the whiffletree or double-tree, and secured therein by the middle or center band, and by a band on each side thereof which surrounds the whiffletree or double-tree at the ends of said brace.

It also consists in a novel means of securing the brace and the side bands against longitudinal movement upon the whiffletree or double-tree.

In the accompanying drawings, Figure 1 represents a plan of a double-tree or evener and two whiffletrees connected thereto, and all embodying my invention, the bands upon the double-tree being in section, for the purpose of better illustrating my invention. Fig. 2 represents an end view of the end eye of the double-tree, showing attached thereto a clevis whereby a whiffletree is connected. Fig. 3 represents a transverse section of the double-tree upon the dotted line *x x*, Fig. 1; and Fig. 4 represents a similar section upon the dotted line *y y*, Fig. 1.

Similar letters of reference designate corresponding parts in all the figures.

The double-tree is formed of a single rod of iron or steel, of round or other transverse section, and about twice the length of the double-tree. The middle portion of this rod is left straight, so as to form the back of the double-tree, and the end portions are bent backward upon the middle portion, forming an eye or loop, *a*, at each end, and an arched middle portion, A, the two ends of the rod meeting, preferably, at about the length of the double-tree. The arched front of the middle portion greatly increases the strength of the double-tree, as the two end portions of the rod act as braces to prevent the bending of the straight back of the double tree.

The two meeting ends of the double-tree might be welded together; but this is not necessary, as the central portion of the double-tree is surrounded by a metal band, B, which may be of malleable iron, and which covers the meeting ends of the rod. This band serves to keep the two portions of the rod from which the double-tree is formed in proper relation to each other, and preferably has through it a hole, *b*, for the reception of a draft pin or bolt.

In order to still further strengthen the double-tree and resist any force which tends to bend it, I preferably insert between the portions of the rod forming the back and front of the double-tree a curved or arched brace, C, the middle portion of which bears upon the middle portion of the front of the double-tree, and which is bent or curved back, so that the ends press against the back of the double-tree and are concealed by side bands, D, which surround the double-tree at each side of the middle band, B.

In order to hold the curved brace C and the bands D in proper position, I preferably insert pins or rivets *c* through said bands, and the ends of the brace C are curved or bent at *d*, so as to bear upon the said pins or rivets.

Owing to the widening of the double-tree toward the middle the bands D cannot approach each other, and the bent or hooked ends of the brace C prevent their moving away from each other.

The two whiffletrees are each composed of a single rod, bent so as to form an arched middle portion, A, and end eyes, *a*, exactly like

the double-tree, and the arrangement of the brace C and the bands D D, together with the pins or rivets *c*, are all exactly similar to the double-tree just described. Each of the eyes or loops *a* of the double-tree receives a clevis, *e*, in which a whiffletree is pivoted by a bolt, *f*, passing through said clevis and through the middle band, B, of the whiffletree. The end eyes or loops, *a*, of the whiffletrees receive trace-hooks *g* of any suitable character.

By my invention I provide for making very strong and simple double-trees and whiffletrees cheaply, and without forging, by simply heating a steel rod and bending it into the form required.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A whiffletree or double-tree composed of a metal rod, the end portions of which are bent backward upon the middle portion and brought together at about the middle of the length of the whiffletree or double-tree, forming eyes or loops at the ends thereof, and an arched middle portion, and a metal band surrounding the whiffletree or double-tree at the meeting ends of the rod, substantially as specified.

2. A whiffletree or double-tree composed of a metal rod bent to form an arched middle portion, A, and eyes or loops *a*, an arched brace C, and the center band, B, and side bands, D, surrounding the whiffletree or double-tree, substantially as specified.

3. A whiffletree or double-tree composed of a metal rod bent to form an arched middle portion, A, and eyes or loops *a*, an arched brace, C, with curved ends *d*, the center band, B, the side bands, D, and the rivets or pins *c*, inserted through said bands and bearing upon the curved ends *d* of the brace C, substantially as specified.

ROBERT W. DAVIS.

Witnesses:

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