

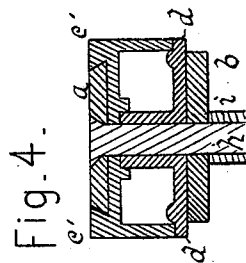
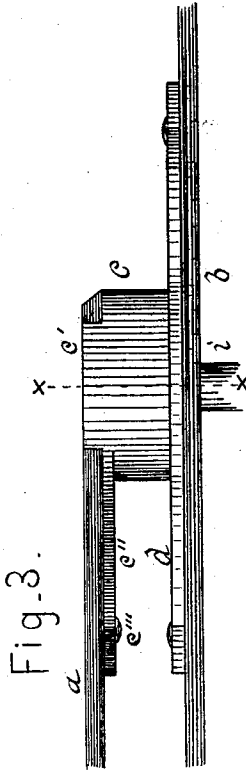
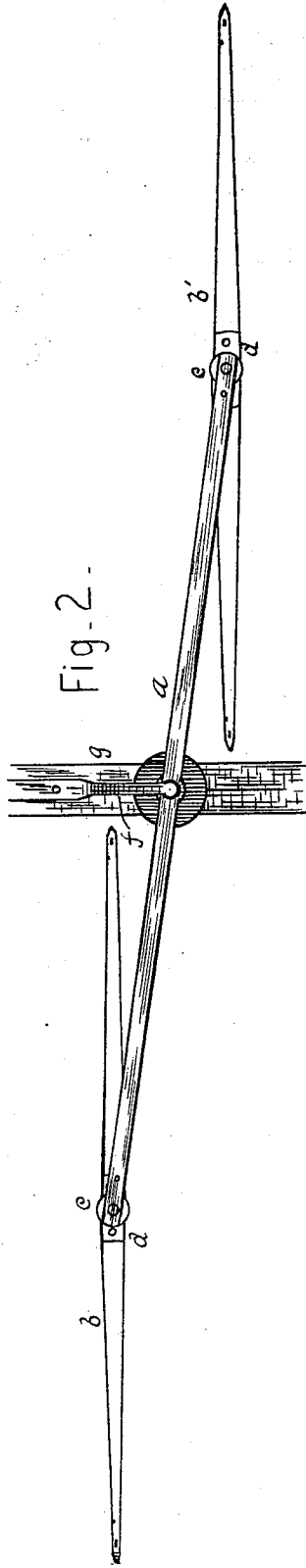
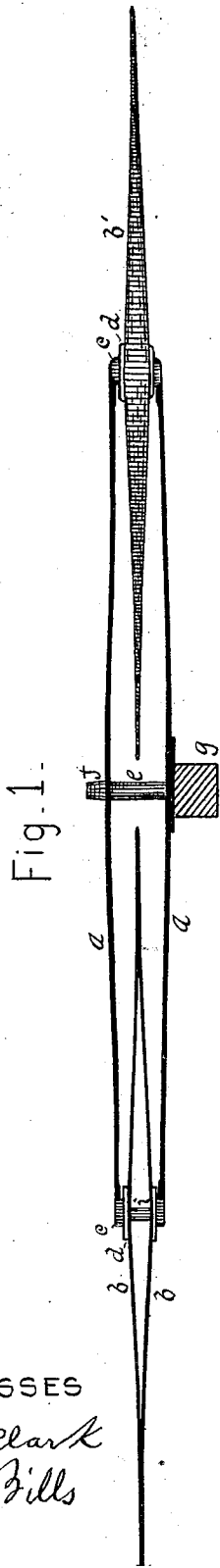
(No Model.)

T. M. VAUGHAN.

WHIFFLETREE.

No. 340,175.

Patented Apr. 20, 1886.



WITNESSES
C. C. Clark
J. N. Bills

INVENTOR
 T. M. VAUGHAN
 By *L. P. Graham*
 atty.

UNITED STATES PATENT OFFICE.

THOMAS M. VAUGHAN, OF FULLER'S POINT, ILLINOIS.

WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 340,175, dated April 20, 1886.

Application filed December 21, 1885. Serial No. 186,310. (No model.)

To all whom it may concern:

Be it known that I, THOMAS M. VAUGHAN, a resident of Fuller's Point, in the county of Coles and State of Illinois, have invented certain new and useful Improvements in Whiffletrees, of which the following is a specification.

My invention consists in certain details of construction and combinations of parts, as hereinafter set forth and claimed, whereby whiffletrees are improved as regards appearance, efficiency, and durability.

In the drawings accompanying and forming a part of this specification, Figure 1 is a front elevation of my device. Fig. 2 is a plan of the same. Fig. 3 is an elevation of a connecting-joint between the double-tree and single-tree; and Fig. 4 is a sectional view on dotted line *xx* of Fig. 3.

a represents metallic bars, of which the double-tree is composed.

b represents metallic bars, of which the single-trees are preferably composed.

b' represents a single-tree formed of wood in the customary manner.

c are pivot-heads provided with dovetail lugs *c'*, arms *c''*, and connecting-rivets *c'''*.

d represents plates rigidly secured to the single-trees in proper position to form bearings for pivot-heads *c*.

e is a brace-bolt that holds the double-tree bars in the relative position shown in Fig. 1, and also secures the double-tree to the tongue.

h is a bolt that passes entirely through a single-tree, *b*, plates *d*, pivot-heads *c*, and the ends of the double-tree bars *a*, and secures the same together.

i is a tubular brace, through which bolt *h* passes, and which separates the bars *b b*.

Bars *a* are preferably formed of steel, in order that they may combine strength, lightness, durability, and grace in a pre-eminent degree, and heads *c* and plates *d* should be cast substantially in the form shown in Figs. 3 and 4.

Dovetail formations on the ends of bars *a* conform to the recesses in heads *c*, and connections are formed between said bars and plates by sliding the ends of the bars between lugs *c'*, and riveting at *c'''*, through plate *c'*.

Heads *c* are recessed in their inner surfaces, as indicated in Fig. 4, and plates *d* are provided with elevations that conform to said re-

cesses, and combine therewith to form a perfect pivot.

The plates *d* and heads *c* may be provided at a small expense, and the labor of securing them in their respective positions will not be great.

The single-trees being held between two supports will always maintain their proper positions, horizontally speaking, with reference to the double-tree. The uniform motion of the device and perfection of its pivot-joints insures great durability, and the light and graceful symmetry that may be obtained by the use of steel bars, in the form indicated, produces a whiffletree that is especially to be commended for use on fine carriages, or wherever appearances are taken into account.

As shown at *b'* in Fig. 1, a wooden single-tree may be used with my metallic double-tree; but it is deemed preferable to construct the entire device of steel, in which case the single-trees will be formed, as shown at *b* in Fig. 1, of two coextensive bars welded together at their ends.

I claim as new and desire to secure by Letters Patent—

1. In whiffletrees, the combination of a pair of coextensive approximately parallel bars having dovetail formations on their respective ends, pivot-heads having dovetail recesses that fit over the ends of the bars, single-trees centrally pivoted between the opposite ends of said bars and provided with plates that engage the pivot-heads, suitable means of securing the bars to the single-trees, and a brace at the longitudinal center of the bars for maintaining relative rigidity, as set forth.

2. In whiffletrees, the combination of bars longitudinally coextensive and approximately parallel pivot-heads *c*, dovetailed on bars *a*, and secured longitudinally thereon by rivets *c'''*, through arms *c''*, single-trees *b*, provided with plates *d*, and central braces *i*, securing bolts *h* and central brace *e* in the position shown, as and for the purpose set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

THOMAS M. VAUGHAN.

Witnesses:

J. H. CRUMM,
H. T. CRUM.