

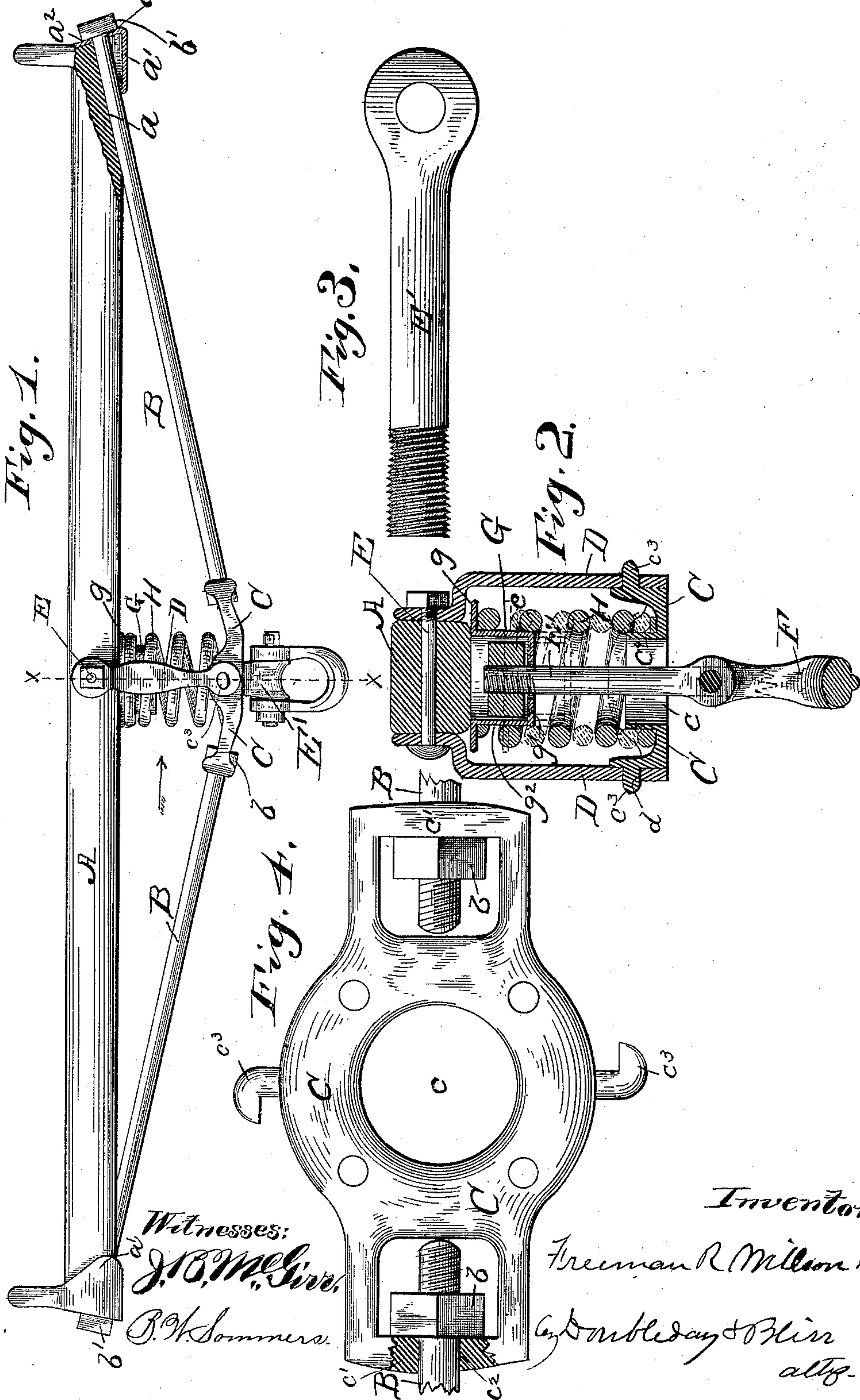
(No Model.)

F. R. WILLSON, Sr.

WHIFFLETREE.

No. 396,676.

Patented Jan. 22, 1889.



N. PETERS, Photo-Lithographer, Washington, D. C.



# UNITED STATES PATENT OFFICE.

FREEMAN R. WILLSON, SR., OF COLUMBUS, OHIO.

## WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 396,676, dated January 22, 1889.

Application filed June 18, 1888. Serial No. 277,493. (No model.)

*To all whom it may concern:*

Be it known that I, FREEMAN R. WILLSON, Sr., a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Whiffletrees, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in whiffletrees for vehicles, pertaining more particularly to devices of the character shown and described in a patent heretofore granted to me, namely, Patent No. 376,462, dated January 17, 1888.

15 The object is to preserve all of the advantageous features of construction and arrangement incident to the form illustrated and described in the said patent, and yet simplify and cheapen the article and make it stronger and more durable, with parts which can be readily replaced, respectively, by others in case of breakage or wear.

25 Figure 1 is a face view of the whiffletree embodying my improvement. Fig. 2 is a cross-section on the line  $x x$ , Fig. 1. Fig. 3 is a view of the draw-bar detached. Fig. 4 is a side view of the plate which supports the truss-rod detached. Fig. 5 shows one of the 30 braces detached.

In the drawings, A represents the main bar of the whiffletree, which is preferably made of wood and can be comparatively light, by reason of the fact that it is strengthened by the truss-rods, to be described. It can, however, be formed of metal, either in a solid bar or a hollow tube in ways now well known. At the ends it is provided with grooves  $a a$ , extending in from the ends a suitable distance 40 and gradually deepening toward the ends. The terminal clips are represented by  $a' a'$ , these having eyes which surround the bar A, and end walls or flanges,  $a^2$ , which cover the ends of the bar A. In each there is an aperture,  $a^3$ , through which one of the truss-rods 45 can pass.

The truss-rods are represented by B B, each being long enough to extend from the eye or socket of one of the clips  $a'$  to a point near 50 the central transverse line of the whiffletree A. At their inner ends they are joined to a plate or frame-piece, C. The latter has a

central aperture,  $c$ , and at the ends is formed with bars  $c' c'$ , each having an aperture,  $c^2$ , through which passes one of the truss-rods. 55 The latter are threaded at their inner ends, and with them engage nuts  $b$ , situated, respectively, on the inner sides of the said cross-bars  $c'$ . The truss-rods are provided with heads  $b'$ , which lie outside of and engage with 60 the walls  $a^2$  of the clips  $a'$ . By turning the nuts  $b$  the parts can be tightly drawn together, and the truss-rods are utilized not only for the purpose of strengthening the main bar A, but also for holding the terminal clips  $a' a'$  65 firmly in place. The outer metal walls,  $a^2$ , of the latter receive the strain of the heads  $b'$ , and thus the ends of the fibers of the wooden part A are saved from wear.

D D represent brace-bars interposed between the central plate or frame-piece, C, and the central part of the bar A. Each brace D has an aperture,  $d$ , adapted to receive a stud or hook,  $c^3$ , formed on the plate or frame-piece C. By means of a through-bolt, E, passing through the whiffletree A, the braces D D are both fastened in place. These braces D D complete the truss-frame for the bar A. 75

E' represents the draw-bar, which passes through the central aperture,  $c$ , in the plate C. At its outer end it is provided with an eye or swivel-piece, F, and at its inner end it has a head or nut,  $e$ . The shank portion of the draw-bar is passed through a socketed plate, G, this having a flange,  $g$ , projecting 85 outwardly and a flange,  $g'$ , projecting inward, there being a short cylindrical part,  $g^2$ , between the flanges. The aforesaid head or nut  $e$  engages with the flange  $g'$ .

H represents a coiled spring around the draw-bar and between the flange  $g$  of the plate G and the truss-plate or frame-piece C. The diameter of the spring is such that it fits snugly around the cylindrical part  $g^2$  of the plate G, and at the other end fits into a seat 95 formed for its reception on the inner side of the plate C. The latter at the edges is formed with flanges  $c^4$ , which turn inward for the purpose of providing the said seat and also for strengthening the plate. 100

When the whiffletree is in place, the strain of the draft draws the plate G away from the bar A to such an extent that the spring can rock upon the seat on the under side of the



plate C, so that the whiffletree can oscillate in any direction without a cramping or binding from the spring.

A construction of the kind herein shown is preferable to that shown in my aforesaid patent, in that I can attain all of the important ends accomplished therewith and at the same time have a simpler and stronger construction. In the said earlier form the oscillations of the spring and whiffletree relatively to each other were allowed by means of a rocking plate at the end of the spring farthest from the bar. In the present construction I attain the same ends by means of the seat provided on the under side of the fixed plate C, the parts forming the said seat being so constructed that the spring can rock or oscillate therein with the same freedom that is incident to the rocking or oscillating plate in the aforesaid earlier construction. The manner of connecting the truss-rods herein provided for is also simpler than that in the earlier construction, and requires fewer parts, which can be readily and cheaply made and firmly fastened together, though allowing an easy adjustment.

What I claim is—

1. The combination, with the bar A, of the truss-rods extending, respectively, from the outer ends of the bar A to points near the central transverse line, and having their inner ends separately and adjustably fastened by means of nuts at their inner ends, adapted to rotate while the parts are joined, substantially as set forth.

2. The combination, with the front bar of the whiffletree and the terminal clips *a'*, of the two truss-rods extending, respectively, in from the terminal clips to a connecting-plate

at the center, and nuts engaging with said plate and adapted to rotate while in place for binding together the said central plate, the terminal clips, and the truss-rods, substantially as set forth.

3. The combination of the bar A, the truss-plate C, the truss-rods B B, the coiled spring bearing directly against the said truss-plate, and the draw-bar connected to the spring, substantially as set forth.

4. The combination of the bar A, the draw-bar E, the truss-plate C, extending around the draw-bar, the braces D, and the rods B B, adjustably connected to the plate C, substantially as set forth.

5. The plate or frame-piece C, having the aperture for the draw-bar and having the bars *c'*, with the apertures for the truss-rods, and having a seat for the spring, substantially as set forth.

6. The combination, with the bar A, of the truss-rods and the terminal clips having end walls covering the ends of the bar and engaged by the truss-rods, substantially as set forth.

7. The combination, with the whifflebar A and the spring, of the plate against which said spring bears directly, the strut or brace D, interposed between the bar A and said plate, and the draw-rods B, having their inner ends connected to the plate at the end of the spring independently of the bar A, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FREEMAN R. WILLSON, SR.

Witnesses:

JOHN ZETTLER,  
JOSEPH BURKE.