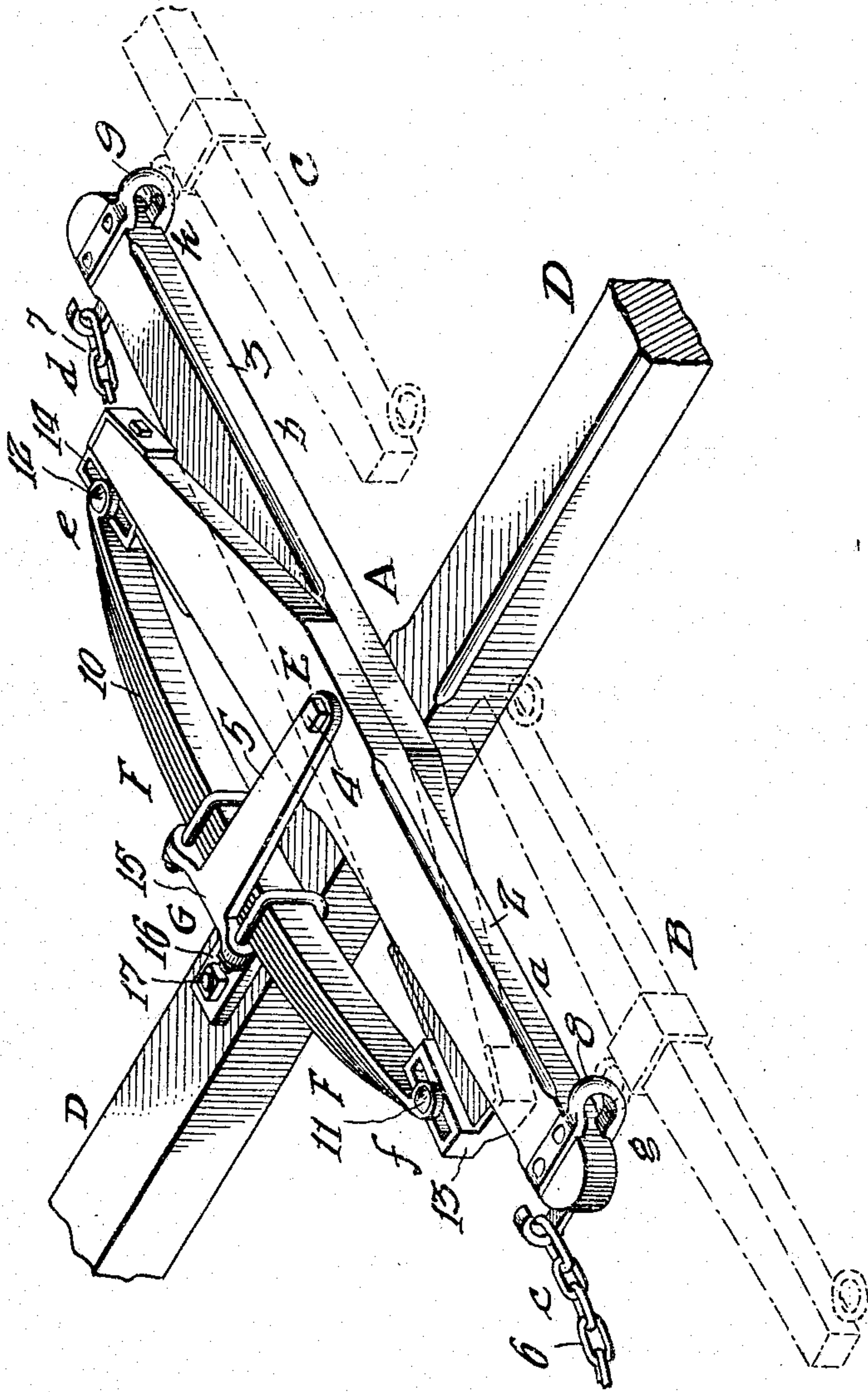


G. M. FRINK.  
DOUBLETREE.

APPLICATION FILED DEC. 10, 1908.

939,002.

Patented Nov. 2, 1909.



Witnesses:

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# UNITED STATES PATENT OFFICE.

GEORGE MONROE FRINK, OF ARCADIA, CALIFORNIA.

DOUBLETREE.

939,002.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed December 10, 1908. Serial No. 466,886.

*To all whom it may concern:*

Be it known that I, GEORGE MONROE FRINK, a citizen of the United States, residing at Arcadia, in the county of Los Angeles and State of California, have invented new and useful Improvements in Doubletrees, of which the following is a specification.

This invention relates to double-trees for vehicles; and it has for its objects to provide an improved draft appliance of the character stated which will be superior in point of simplicity and inexpensiveness of construction; convenience in installation, detachment and adjustment; positiveness in operation, durability, and general efficiency; and whereby the strain or load imposed upon the draft animals hitched to the vehicle may be effectively equalized and tensionally opposed with respect to each draft animal.

The invention consists in the novel provision, construction, combination, association and relative arrangement of parts, members and features, all as hereinafter described, shown in the drawing and finally pointed out in claims.

The drawing is a perspective view of a draft appliance embodying the invention, the same being illustrated as connected with a member of a vehicle.

Referring with particularity to the drawing A designates an improved double-tree embodying the invention, the same comprising two members, *a* and *b* which may be respectively provided with swingle-trees, B and C respectively, the latter being shown in dotted lines and not entering into the invention. The members *a* and *b* of the double-tree A are illustrated as mounted upon the wagon tongue D of a vehicle through the agency of connection means E serving as a common fulcrum for both members *a* and *b*.

F designates tension means opposing the members *a* and *b*; said tension means being preferably unitary and serving to allow yielding movement of both members *a* and *b*.

*c* and *d* designate respectively connection means between the members *a* and *b* and the vehicle structure, the latter being not shown and being in no manner specifically concerned in the invention.

*e* and *f* designate respectively operative connections between the members *a* and *b* of the double-tree and the tension means F; said operative connections permitting play

between said members and said tension means.

Referring with particularity to the construction shown in the drawings as embodying the invention, and as constituting a preferred embodiment of the same, each of the members *a* and *b* of the double-tree comprises a draft bar, 2 and 3 respectively, which bars are jointly intermediately pivotally mounted upon the wagon tongue D by the connection means E consisting of a pin or bolt 4 passed through both said bars and connected with the wagon tongue; said pin or bolt also passing through a tongue 5 which extends above the uppermost draft bar 2 and is comprised within holding means G whereby the tongue 5 and the tension means F are secured to the wagon tongue D.

The connection means *c* and *d* may consist each of a chain, 6 and 7 respectively, connected with one end of the respective bar 2 or 3 and adapted to be led rearwardly and attached to the vehicle structure.

*g* and *h* designate respectively connection means whereby the swingle-trees B and C may be attached respectively to the draft bars 2 and 3; said connection means *g* and *h* consisting each of a hook, 8 and 9 respectively, connected with one end of the respective bar 2 or 3, and with the same end as that with which the chain 6 or 7 is connected; said hooks 8 and 9 extending forwardly from the bars 2 and 3 respectively. The end portions of the bars 2 and 3 with which the hooks 8 and 9 are connected are the longer end portions of said bars, calculating from the pin or bolt 4 of the connection means E.

The tension means F is connected with the bars 2 and 3 at the outer ends of the shorter end portions of said bars, through the agencies of the operative connections *e* and *f*; and said tension means preferably consists of an elongated and centrally bowed built-up leaf spring 10 which is centrally connected with the wagon tongue B by the holding means G. The ends of the spring 10 are provided respectively with pins or bolts 11 and 12 which are mounted to traverse elongated boxes, 13 and 14 respectively, constituting the operative connections *f* and *e*; said boxes being respectively clamped or otherwise secured to the shorter end portions of the draft bars 3 and 2, at the outer ends and rearwardly of the same.



The holding means G may comprise a frame 15 embracing the spring 10 centrally; the tongue 5 projecting forwardly from the same above the spring, and a plate 16 projecting rearwardly from the same and connected with the tongue D, as at 17. The holding means G are located upon the wagon tongue D rearwardly of the connection means E, supporting the spring 10 rearwardly of the double-tree A.

The operation, method of use and advantages of the improved double-tree constituting the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawing and the following statement:—The two draft bars 2 and 3 of the double-tree are mounted upon the wagon tongue D in superimposed relation, the draft bar 2 being the upper bar; and it results that the connection means *g* for the swingle-tree B is higher than the connection means *h*. Because of this difference in the resultant elevations of the swingle-trees, the taller of two draft animals hitched to the double-tree is directly hitched to the swingle-tree B. The direct pull upon the draft bars 2 and 3, imposed by the swingle-trees B and C, is received by the wagon tongue D through the pin or bolt 4 which serves as a common fulcrum for both draft bars. The rearward play of the shorter end portion of each draft bar is yieldingly opposed by the spring 10, through the agency of the respective operative connection *e* or *f*, each of which operative connections permits play of the respective end of the spring along the respective draft bar, through the agency of the respective pin or bolt 12 or 11 and its confining box 14 or 13. Each draft bar, in its pivotal movement during the imposition of its load-strain upon the pin or bolt 4, is resiliently stopped by the spring 10, obviating the violent strain upon the respective draft animal otherwise resultant upon variations in working conditions. The tendency of the tongue D to play laterally under the deflecting strains of the draft bars is neutralized by the opposing actions of both draft bars, acting through the spring 10; and thus the tractions of both draft animals are yieldingly opposed one to the other, equalizing the strain with respect to both draft animals and equally dividing the load between them. The connection means *c* and *d*, when led to the vehicle structure, prevent excessive pivotal movements of the

draft bars 2 and 3 and over-exertion of the spring 10; such connection means limiting the forward movements of the longer end portions of the draft bars.

I do not desire to be understood as limiting myself to the specific provision, construction, combination, association and relative arrangement of parts, members and features shown and described; but reserve the right to vary the same, in adapting the improvements to varying conditions of use, without departing from the spirit of the invention or the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent:—

1. An improved draft appliance for vehicles, comprising a two-membered double-tree, both members being jointly pivotally connected with the vehicle structure immediately of their ends, a leaf spring connected with the vehicle structure, and operative connections between one end of each of said members and one end of said leaf spring.

2. An improved draft appliance for vehicles, comprising a two-membered double-tree, both members being jointly pivotally connected with the vehicle structure immediately of their ends, a leaf spring connected with the vehicle structure, and operative connections between one end of each of said members and one end of said leaf spring; said operative connections permitting play between said members and said leaf spring.

3. An improved draft appliance, comprising a two-membered double-tree, both members being pivotally connected with the vehicle structure immediately of their ends, a leaf spring connected with the vehicle structure, and operative connections between each end of said leaf spring and one end of each of said members; said operative connections permitting play between said members and said leaf spring and comprising pins or bolts with which the end portions of the spring are respectively provided, and boxes secured to the respective members and which said pins respectively traverse.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE MONROE FRINK.

Witnesses:

FRED A. MANSFIELD,  
TILLIE E. ADAM.