

No. 768,045.

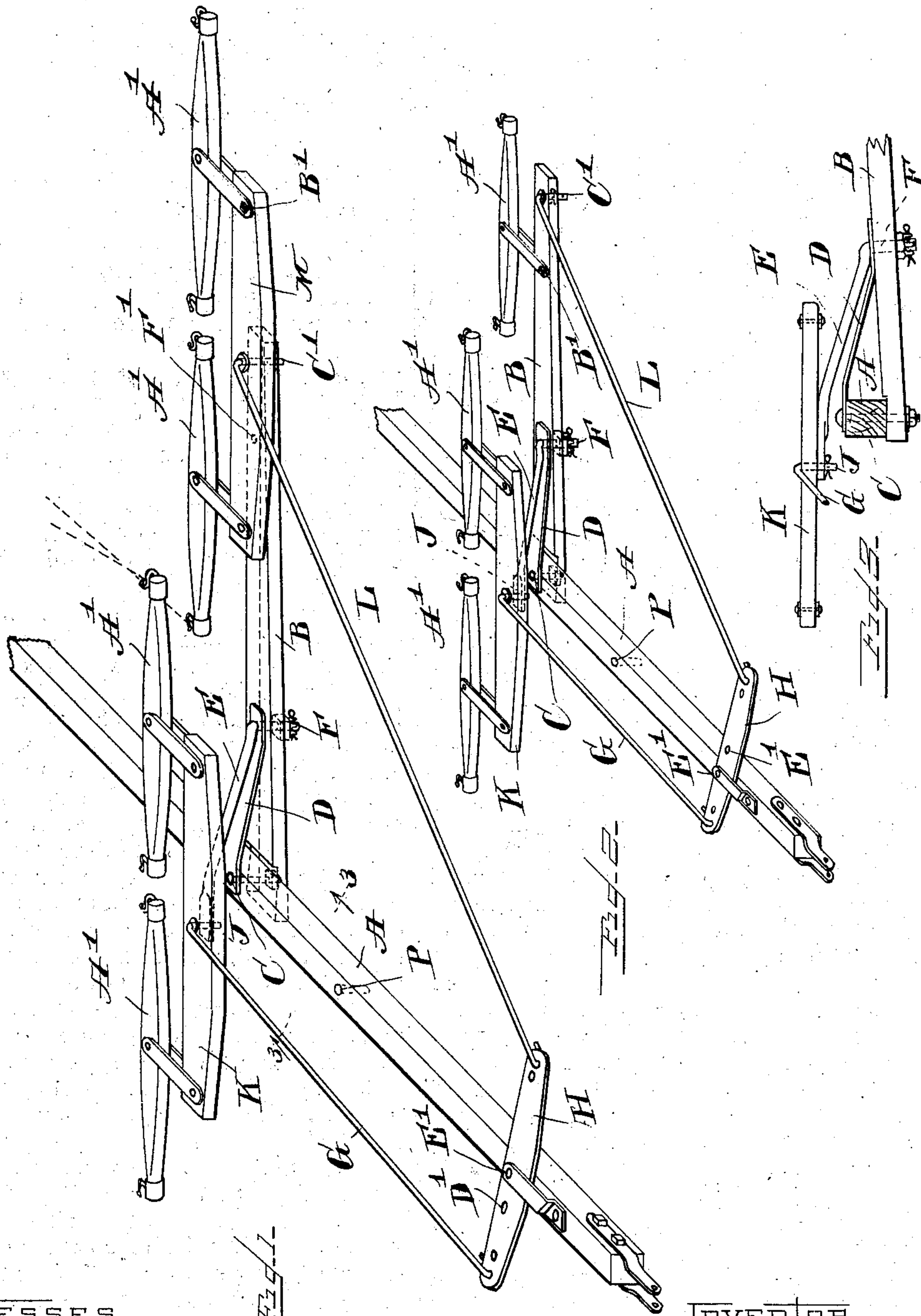
PATENTED AUG. 23, 1904.

P. HANSON.

### DRAFT EQUALIZING MECHANISM.

APPLICATION FILED JULY 6, 1903.

NO MODEL.



WITNESSES.

E. C. Sample  
Auditor

INVENTOR

Paul Hanson  
By Moore & Darby  
Attys



# UNITED STATES PATENT OFFICE.

PAUL HANSON, OF ST. PAUL, MINNESOTA.

## DRAFT-EQUALIZING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 768,045, dated August 23, 1904.

Application filed July 6, 1903. Serial No. 164,451. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL HANSON, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Draft-Equalizing Mechanism, of which the following is a specification.

This invention relates to draft-equalizing mechanism.

The object of the invention is to provide a construction which is simple and efficient and economical of manufacture for equalizing the pull or draft of horses or the like.

A further object of the invention is to provide a draft-equalizing mechanism which may be readily accommodated to two, three, or four horses, as may be desired, and without the necessity of supplying special parts or mechanism for making the change from one to the other.

A further object of the invention is to provide a draft-equalizing mechanism in which the side draft created when two or more horses are placed upon one side of the tongue of the machine is reduced to a minimum.

Other objects of the invention will appear more fully hereinafter.

The invention consists, substantially, in the construction, combination, location, and arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawings, and finally pointed out in the appended claims.

Referring to the accompanying drawings, and to the various views and reference-signs appearing thereon, Figure 1 is a view somewhat in perspective of a draft-equalizing mechanism embodying the principles of my invention, showing the adaptation thereof to four horses. Fig. 2 is a view similar to Fig. 1, showing the apparatus arranged for three horses. Fig. 3 is a view in section on the line 3-3 of Fig. 1 looking in the direction of the arrows.

The same part is designated by the same reference-sign wherever it occurs throughout the several views.

Reference-sign A designates the tongue of the machine. A bolt C, passing through said tongue, serves as a securing-pivot for one end

of a spreader-strut B, said spreader-strut extending transversely to one side of the tongue.

D designates a brace for the spreader-strut, the bolt C serving to secure said brace to the tongue at one end, the other end of said brace being suitably secured to the strut.

Preferably the inner end of the strut B is applied to the under side of the tongue, as most clearly shown in Fig. 3, and the bolt C, passing through the brace D, tongue A, and strut B, is provided with a nut on the lower end thereof serving to pivotally clamp these parts together.

K designates the inner and M the outer doubletree, to the respective ends of each of which are connected swingletrees A'. One of the swingletrees A' of the outer doubletree M may be made removable, as indicated, by means of bolt B', Fig. 1, for a purpose presently to be described. The outer doubletree M is pivotally connected in a convenient manner to the outer end of the spreader-strut B.

In apparatus of the character to which this invention relates it is desirable that the space between the tongue and the outer horse, where two or more horses are employed on the same side of the tongue, be as limited as possible in order to reduce the side draft upon the machine. In order to accomplish this result, the inner swingletree of the outer doubletree M and the outer swingletree of the inner doubletree K should be brought into closer relation—that is, in the case of a four-horse even, as shown in Fig. 1, and in the case of a three-horse even, the outer swingletree, shown in Fig. 2 and which is connected to the spreader-strut B, should be brought into as close relation as possible with the outer swingletree of the inner doubletree K. This close relation should be so arranged as to prevent or to avoid rubbing or interference of the traces, respectively connected to the adjacent ends of these swingletrees. In order to accomplish these results, I arrange the doubletrees M and K to operate in different horizontal planes. To this end the spreader-strut B is applied to the under side of the tongue A, as above explained, and the inner doubletree K is pivotally supported upon the inner end of a supporting-brace E, the other end of said supporting-



brace being pivotally connected to the spreader-strut B and bent upwardly over and transversely across the tongue A, as clearly shown in the drawings. In practice the outer  
 5 end of this supporting-brace is bent and is arranged to pass through a hole formed in the spreader-strut B. This bent end of brace E may also pass through the outer end of the  
 10 brace-arm D, as indicated at F, the extreme bent end of brace E being threaded to receive a nut whereby these parts may be pivotally clamped together. In this manner the inner  
 15 doubletree K is raised above the horizontal plane in which the outer doubletree M vibrates, thereby enabling the doubletree M to be set in closer relation to the tongue without danger of rubbing or interference of the traces, and hence reducing side draft to a minimum.

20 H designates the equalizing-lever, pivotally connected or strapped in the ordinary or usual manner to the tongue.

G designates the inner draft-rod, hooked at one end into a hole formed in one end of the  
 25 equalizing-lever H at its opposite end, as indicated at J, the bent end J passing through a central opening or hole through doubletree K and through a hole or opening in the supporting end of brace E, as clearly shown.

30 L designates the outer draft-rod, said draft-rod being hooked at one end into a hole or opening formed in the other end of equalizing-lever H and bent at its outer end, as indicated at C', said bent end forming a pivotal connection between the outer doubletree M and the  
 35 outer end of the spreader-strut B, said bent end passing through a hole centrally of the outer doubletree M and through a hole formed in the outer end of the spreader-strut.

40 The equalizing-lever H is provided with a series of holes at each end thereof, so as to vary the point of connection of the draft-rods G and L thereto, as may be desired, in order to properly distribute the load to be imposed  
 45 upon the horses on one side or the other of the tongue, the shifting of the connections of the draft-rods to the arms of the equalizing-lever serving to alter or vary the leverage exerted by the pull of the horses. The  
 50 equalizing-lever H is also provided with holes or openings D' E' therein at various points with reference to its longitudinal center to receive the pivot-bolt E', by which it is pivotally connected to the tongue, thus also af-  
 55 fording means for distributing and equalizing the pull or load imposed upon the horses.

In Fig. 1 the device is shown arranged for a four-horse evenner.

60 In Fig. 2 the device is shown as arranged for a three-horse evenner. In this connection and arrangement the outer doubletree M is removed and one of the swingletrees A' thereof is removed therefrom and pivotally connected in a hole (indicated by dotted lines at  
 65 F' in Fig. 1) in the spreader-strut B. At the

same time the equalizing-lever H is shifted in one direction or the other with reference to the leverage of the arms thereof or the draft-links G and L are shifted as to their  
 70 equalizing-lever end connections in order to properly distribute the leverage exerted by the pull of the horses.

When it is desired to employ only two horses, the spreader-strut B and its associated  
 75 doubletree M and swingletrees A', together with the equalizing-lever H and draft-rods G L, are removed, as is also the supporting-brace E for the inner doubletree, and the bolt C is employed for pivotally securing the double-  
 80 tree K to the tongue. The thickness of the doubletree K corresponding with the thickness of the spreader-strut B at the point where the latter is applied to the tongue, it will be seen that the bolt C is adapted to se-  
 85 cure or pivotally connect the doubletree K to the tongue when the spreader-strut B is removed. In this event the brace D may be swung around into parallel relation with the tongue and secured thereto through the hole  
 90 (indicated at P) by means of the bolt E', said bolt being removed with the equalizing-lever H, and in this relation the strap or brace D will serve the purpose of a hammer-strap.

From the foregoing description it will be seen that I provide an exceedingly simple and  
 95 efficient and economical apparatus for equalizing the draft and which is adapted for use with either two, three, or four horses and without the necessity of employing special parts.  
 100

It will also be seen that I am enabled to bring the horses used on one side of the tongue into close relation with respect to the tongue, thereby reducing side draft to a minimum,  
 105 and it will also be seen that I make provision of means whereby the load may be distributed upon the draft-horses according to the abilities of such horses.

110 It will also be seen that I provide an apparatus which is inexpensive and light without sacrificing anything of strength or durability.

Having now set forth the object and nature of my invention and a construction embodying the principles thereof, what I claim as new  
 115 and useful and of my own invention, and desire to secure by Letters Patent, is—

1. In a draft-equalizing mechanism, the combination with a tongue, a spreader-strut pivotally connected at one end to the under side  
 120 of said tongue, draft appliances pivotally connected to the outer end of said strut, a supporting-brace carried by said strut and extending over and above the tongue, draft appliances pivotally connected to said brace, an  
 125 equalizing-lever pivotally mounted upon the tongue, and draft-rods pivotally connected at the respective ends thereof to the ends of said equalizing-lever and to said brace and strut, as and for the purpose set forth.  
 130



2. In a draft-equalizing mechanism, a tongue, a spreader-strut, a supporting-brace therefor, a bolt pivotally connecting said brace, tongue and strut together, a supporting-brace having a bent end arranged to extend through said strut and first-mentioned brace, a doubletree pivotally connected to the other end of said supporting-brace, and draft appliances respectively connected to said doubletree and strut, as and for the purpose set forth.

3. In a draft-equalizing mechanism, a tongue, a spreader-strut arranged to be applied to the under side of said tongue, a brace for said strut, a bolt passing through said brace, tongue and strut to pivotally clamp these parts together, a supporting-brace having a bent end, arranged to pass through said first-mentioned brace and strut, said supporting-brace having an opening in the other end thereof, a doubletree, a draft-rod having a bent end, arranged to pass through said doubletree and the opening in the end of said supporting-brace, a draft-rod arranged to engage the outer end of said strut, draft appliances connected to said

strut, and an equalizing-lever to which the other ends of said draft-rods are connected; all combined and arranged as and for the purpose set forth.

4. In a draft-equalizing mechanism, a tongue, a spreader-strut removably connected thereto, draft appliances carried by the outer end of said strut, a supporting-brace removably mounted on said strut, and draft appliances removably connected to said brace, an equalizing-lever pivotally mounted on the tongue, and removable connections between the ends of said lever and said brace and strut respectively, whereby the mechanism may be changed to accommodate two, three or four horses, as and for the purpose set forth.

In witness whereof I have hereunto set my hand, this 29th day of June, 1903, in the presence of the subscribing witnesses.

PAUL HANSON.

Witnesses:

CHAS. H. SEEM,  
S. E. DARBY.