G. L. FORMAN.

HAME AND TRACE CONNECTOR.

APPLICATION FILED APR. 1, 1914.

1,167,160.

Patented Jan. 4, 1916.

Fig. 7.

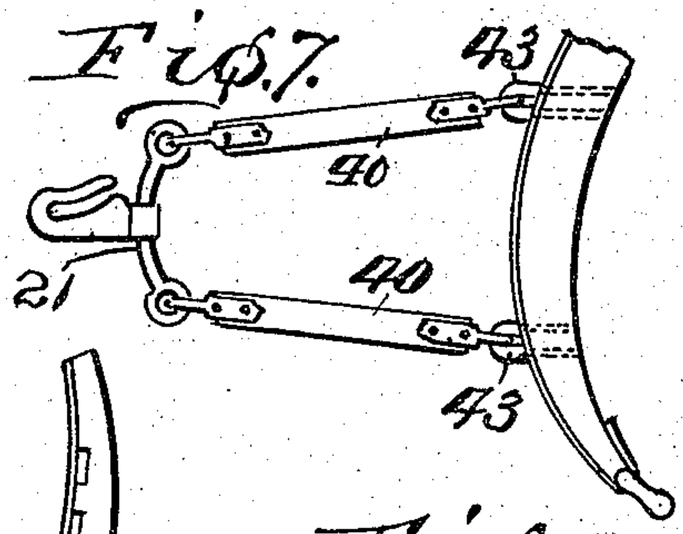


Fig. 9.

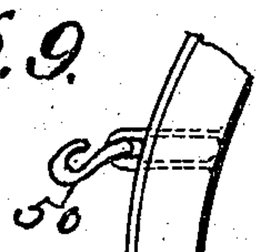


Fig. 10.

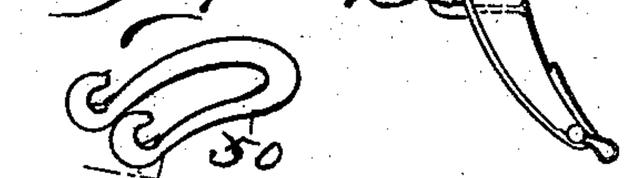


Fig. 1.

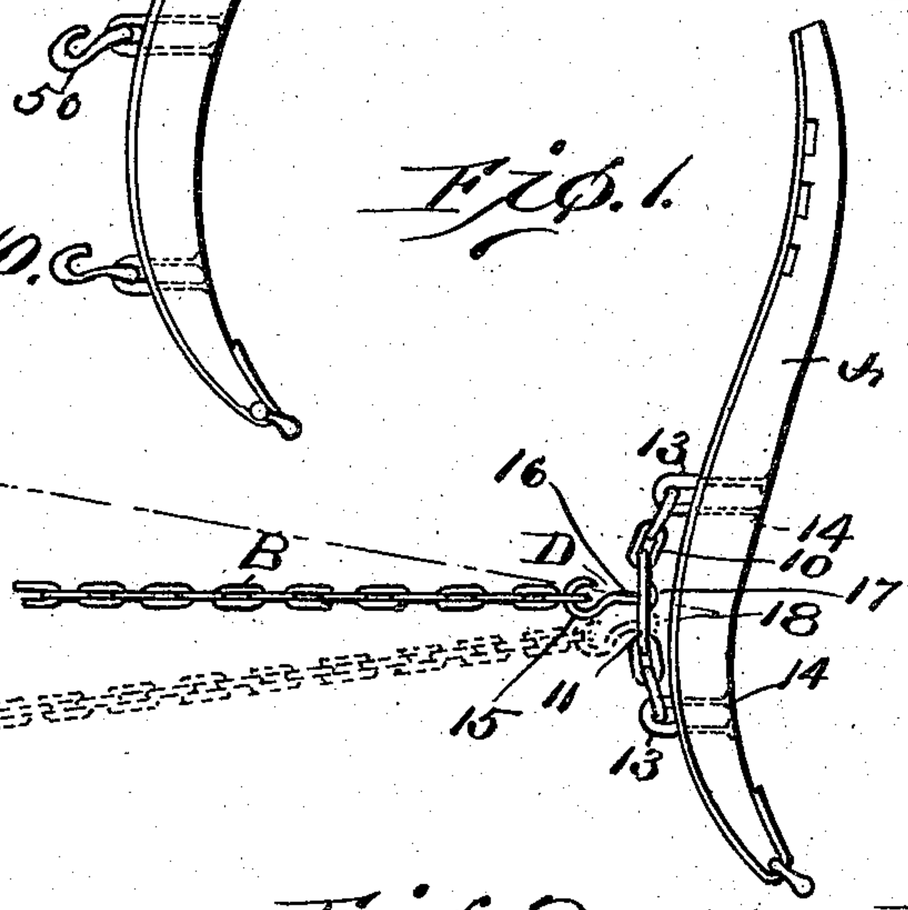


Fig. 4.

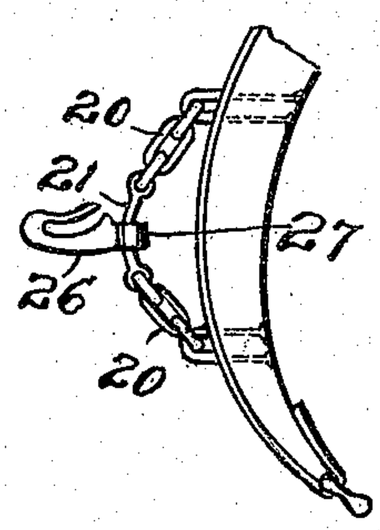


Fig. 2.

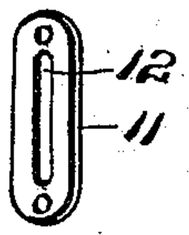


Fig. 3.

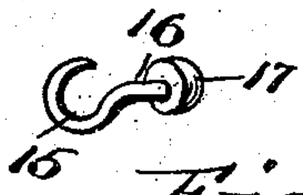


Fig. 6.

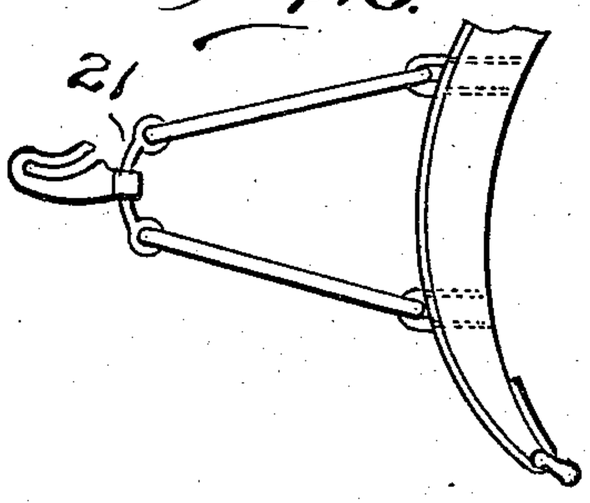


Fig. 5.

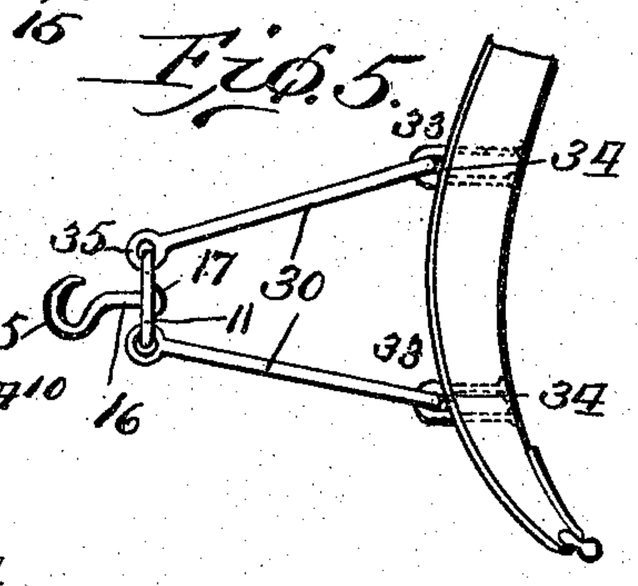
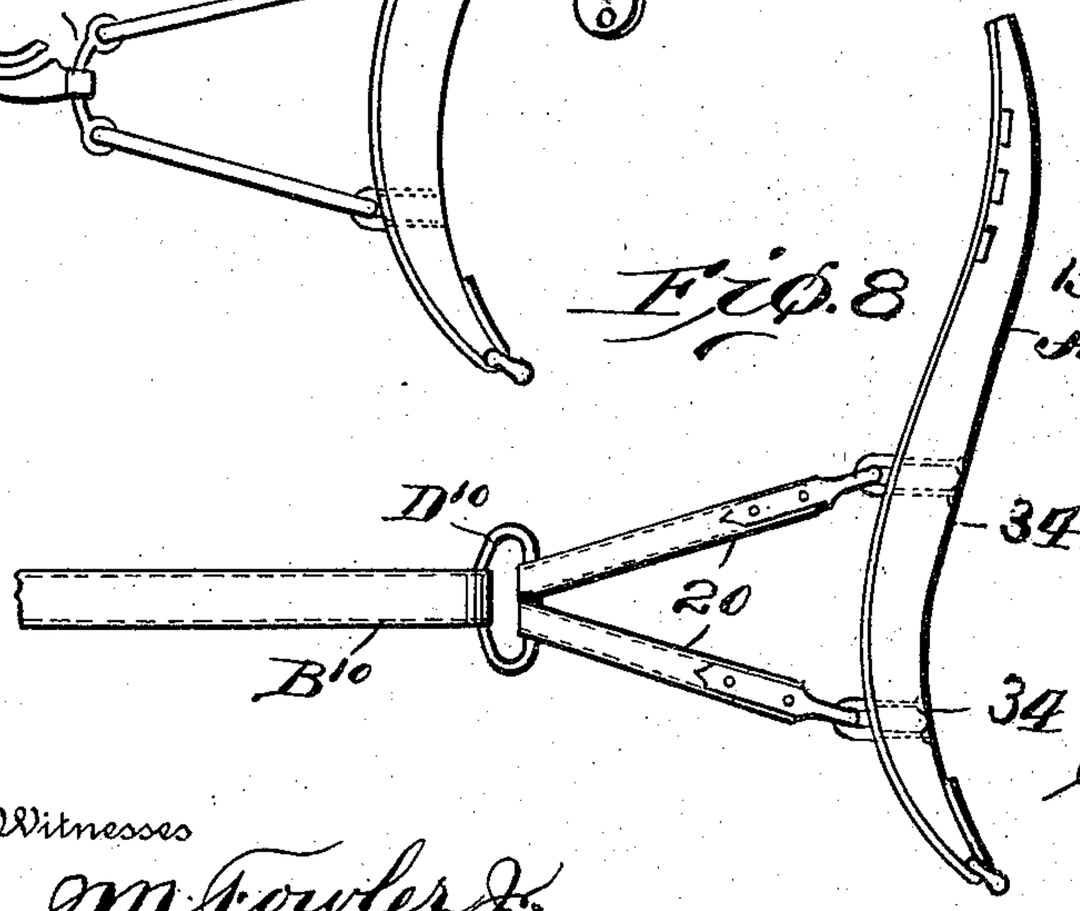


Fig. 8



Witnesses

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UNITED STATES PATENT OFFICE.

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HAME AND TRACE CONNECTOR.

1,167,160. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed April 1, 1914. Serial No. 828,770.

To all whom it may concern:

Be it known that I, GEORGE L. FORMAN, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented new and useful Improvements in Hame and Trace Connectors, of which the following is a specification.

This invention has relation to certain improvements in hames, but particularly relates to a draft mechanism which is interposed between the trace and the body of the hame and is specially designed to fully overcome in a most simple and practicable manner the irritation and galling of the shoulder which results from a localization of the strain of the draft upon a single point on the hame.

I overcome the disadvantage noted by connecting a part of the draft connection to the hame body at a plurality of separated places and by connecting the trace to said part through the intervention of a member which is arranged so that automatic relative adjustment between the hame-part and trace member is effected in accord with changes in the direction of pull, the relative adjustment being in the direction of the length of the hame body and such that the line of pull will always be centrally between the points of attachment of the hame-part to the body of the hame.

In the accompanying drawings wherein like characters of reference denote like parts in the several views, I have shown several different typical embodiments of the invention, but it should be understood that these are merely exemplary and that the invention may be otherwise variously embodied without departing from its spirit or the scope of the subjoined claims.

In the drawings: Figure 1 is a side elevation of a hame body and part of a trace connected to each other by a mechanism made in accordance with my invention, exemplifying a form wherein a slotted plate has its ends connected by flexible elements to the hame-body. Fig. 2 is a detail representation of the slotted plate. Fig. 3 is a detail representation of a form of trace-member which may desirably be employed with said slotted plate. Fig. 4 is a side elevation showing part of a hame-body exemplifying one form wherein a bar is substituted for the slotted plate. Fig. 5 is a side elevation exemplifying a form in which rigid members are substituted for the flexible elements shown in the preceding views, this figure showing said rigid members connected to a slotted plate like that shown in Figs. 1 and 2. Fig. 6 is a view similar to Fig. 5, except that it exemplifies a bar and trace-member like those shown in Fig. 4, in lieu of the slotted plate and trace-member shown in Fig. 5. Fig. 7 is a view exemplifying the use of flexible straps as substitutes for the links shown in Figs. 1 and 4. Fig. 8 is a side elevation of a hame body and part of a trace connected to each other by a draft mechanism which comprises a loop or D and flexible straps. Fig. 9 is a detail representation exemplifying a means for making the draft mechanism readily detachable from the hame. Fig. 10 is a perspective view of a hook which may desirably be employed in the latter construction.

Referring to Figs. 1, 2 and 3: A designates a hame-body which may be of the usual or any suitable construction and B designates a trace. The trace shown in this figure is a chain, but it may be of any other suitable kind. In this particular form of the invention the part of the draft mechanism which is attached to the hame-body is composed of an appropriate number of links, 10, and an intermediate plate 11, the said plate having its ends loosely or pivotally connected to the links and being formed with a longitudinal opening 12. The upper and lower end links are loosely or pivotally secured to the hame-body, at 13, by suitable means, as the staples 14, for example. The trace member, marked D, may desirably consist of a hook 15 which is engaged by the trace B and has its shank or stem 16 passed through the slot 12 and provided with a head 17 at its end, whereby said hook is free to slide within the slot 12 in the direction of the length of the hame-body A and is held against displacement from the plate 12 by the head 17. It will be noted that the member D is free to move in the direction of the length of the hame-body A and that it automatically so adjusts itself to the line of draft that the latter falls always upon a point, indicated at 18, which is centrally between the places at which the

other part of the mechanism is attached to the hame-body, and that the said places of attachment are so arranged with respect to each other as to distribute the strain over a comparatively considerable area of the hame-body. It will further be noted that the beneficial results accruing from the use of a hame-member which is secured to the hame-body at separated places and is correlated with a trace member which automatically adjusts itself to accord with the line of pull are secured in a simple and practicable manner by the construction herein described.

Other means than the slotted plate 11 and trace member D, arranged to have free relative sliding movement in the direction of the length of the hame-body, may be employed if desired. For example, in Figs. 4, 6 and 7, I have shown a bar, marked 21, as a substitute for the slotted plate, and a hook 26, having an eye 27 loosely mounted on the bar, as a substitute for the member D. It will be observed that in Fig. 4, I have shown the rod or bar 21 connected to the hame-body at separated places along the length of the latter, by links which are loosely pivotally connected to the ends of the bars and to the hame-body, these parts being like the corresponding parts in Fig. 1: but if preferred other fexible means may be substituted for the chains formed by the links referred to, as exemplified in Figs. 7 and 8, or the means which connect the intermediate element with the hame body may be of rigid construction as exemplified in Figs. 5 and 6.

Upon reference to Fig. 5, it will be noted that I have exemplified a form of the invention wherein two rigid arms 30 whose ends are loosely or pivotally connected, at 33, to staples 34 by which they are attached to the hame body, extend convergently from the staples to opposite ends of a connecting element which is structurally the same as the plate 11 and which is correlated with a trace member identical with that shown in Fig. 3. The arms 30 are pivoted to the ends of the plate 11, as shown at 35. In Fig. 6, I have shown a construction in which the arms 30 have their rear ends pivoted to a bar which is marked 21, being like that shown in Fig. 4.

In Figs. 7 and 8, I have shown leather straps as substitutes, as already stated, for the chains 10 and arms 30. In the construction shown in Fig. 7, the straps, marked 40, have their forward ends provided with eyes 43 by which they are pivotally attached to the staples and the straps extend thence convergently to opposite ends of and are pivotally attached to a connector 21, the said connector being in this particular instance identical with the bars 21 of Figs. 4 and 6. In Fig. 8, the two flexible straps 20 have their rear ends loosely looped over the trace member D^{10}, the latter preferably consisting of an ordinary loop or D as shown. This loop or D is connected to the forward end of the trave B^{10}. The trace employed with the form of the invention shown in Fig. 8 is preferably leather. The trace may be either a chain or leather, in any of the other forms. When the line of pull is changed, in the construction shown in Fig. 8, the trace member D^{10} moves automatically with relation to the members 20 in the direction of the length of the hame-body, whereby the line of pull always falls on the hame-body A^{10} at a point centrally between the attaching elements 34. In all of the other forms the trace member slides on the plate or bar, as the case may be.

In all of the herein exemplified forms of the invention the members of the draft connection are connected to each other at a place which is substantially in line with a point equidistant between the places at which the draft connection is secured to the hame-body and the several parts are loosely connected to each other. As already stated, one member of the draft connection is arranged to move automatically in the direction of the length of the hame body when the direction of pull is changed, and it will be observed that in the several forms herein exemplified this automatic shifting of the point of connection of the draft members to each other is brought about by forming one member with an opening through which another member loosely extends so as to permit free relative sliding movement between said members in the direction of the length of the hame body.

If it is desired to arrange the draft connection so that it may be quickly detached from the hame body, various practical ways of accomplishing this may be resorted to, the way preferred by me being shown in Figs. 9 and 10, wherein each staple 14 is shown as being provided with an approximately U-shaped hook 50 whose spaced limbs 51 are formed with reverted free ends adapted to be engaged by and to retain an eye or other suitable element on the draft connection.

Having now described the invention what I believe to be new and desire to secure by Letters Patent, is:—

1. The combination of a hame-body and a draft connection, the said draft connection comprising an element arranged to be attached to a trace and a means for connecting said element to the hame-body, said means being attached to the hame-body at separated places along the length of the latter, and said element and means being connected to each other substantially in line

with the center of the space between said places, the connection between the trace-element and means being arranged to permit free relative sliding movement in the direction of the length of the hame-body.

2. The combination of a hame-body and a draft connection, said draft connection comprising elements which are connected to the hame body at spaced places along the length of the latter and an element arranged to be connected to a trace, the latter element having a loose connection with the first-named elements at a place which is substantially in line with a point on the hame body equidistant from the places at which said first-named elements are connected to the hame-body.

3. The combination of a hame-body and a draft connection, said draft connection comprising a part arranged to be connected to a trace and a means having end parts which are loosely attached to the hame-body at separated places along the length of the latter, the trace part and said means having connection with each other at a place which is substantially in line with a point on the hame-body equidistant from the places at which the end parts are secured to the hame-body, said connection being arranged to permit relative sliding movement in the direction of the length of the hame-body automatically, in accord with changes in the direction of the line of pull.

4. The combination of a hame-body and a draft connection, said draft connection having end parts which are loosely connected to the hame-body at separated places along the length of the latter and an interposed part which is loosely connected to the end parts, the draft connection also having a member which is arranged to be connected with a trace and is loosely connected to the interposed part, the connection of the interposed part and the said member being such as to permit free relative sliding movement thereof in the direction of the length of the hame-body, in accord with changes in the direction of the line of pull.

5. The combination of a hame-body and a draft connection, the draft connection comprising elements which are loosely connected to the hame body at spaced places along the length of the latter and an element which is arranged to be connected to a trace and has connection with the first named elements, the connection between said elements including an opening arranged to permit free relative sliding movement in the direction of the length of the hame-body.

6. The combination of a hame-body and a draft connection, the said draft connection comprising an element arranged to be attached to a trace and a means for connecting said element to the hame-body, said means having flexible elements which are pivotally attached to the hame-body at separated places along the length of the latter, said trace element and flexible elements having connection with each other at a place which is substantially in line with a point equidistant between the places at which the flexible elements are connected to the hame-body and said connection being arranged to permit free relative sliding movement of the trace element and flexible elements in the direction of the length of the hame-body.

7. The combination of a hame-body and a draft connection, the draft connection comprising a trace-member and a bar, the bar having means by which its ends are connected to the hame-body at separated places along the length of the latter and the trace member being automatically slidable on the bar in accord with changes in the direction of the line of pull.

8. A hame body, a bar, and flexible means which connect the ends of the bar with the hame-body and are attached to the hame-body at separated places along the length of the latter, combined with a trace-member which is slidably mounted on the bar.

9. A hame body, a bar, means having ends loosely connected to the ends of the bar and other ends loosely connected to the hame-body at spaced-apart places along the length of the latter, and a trace element loosely connected to the bar and automatically slidable therealong in accord with changes in the direction of the line of pull.

10. A hame body, a bar, means loosely connected to the ends of the bar and extending divergently therefrom to the hame-body and having loose connection with the latter, and a trace element loosely connected to the bar at a place which is substantially in line with a point on the hame-body equidistant from the places at which said means are connected to the hame-body, the trace element being automatically slidable along the bar in accord with changes in the direction of the line of pull.

11. A hame-body having staples at spaced distances along its length; elements whose corresponding ends are loosely connected to said staples, respectively; connecting means for the other ends of said elements, loosely connected thereto; and a trace element loosely mounted on said means so as to be freely adjustable thereon in the direction of the length of the hame-body in accord with changes in the direction of the line of pull.

12. A hame-body having staples at spaced distances along the length thereof, open hooks loosely connected to said staples, elements whose corresponding ends are detachably engaged with said open hooks, an element arranged to be connected to a trace, and a loose connection between the latter

element and the other ends of the first-named elements, the last named element being slidable transversely of the ends of the first-named elements to automatically change position in accord with changes in the direction of the line of pull.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE L. FORMAN.

Witnesses:
RAY M. MCGRATH,
LOUISE M. KOENIG.