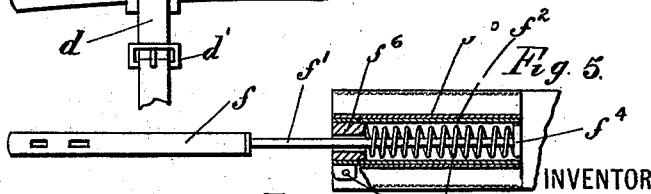
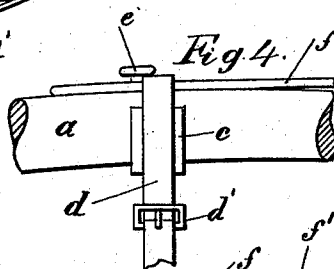
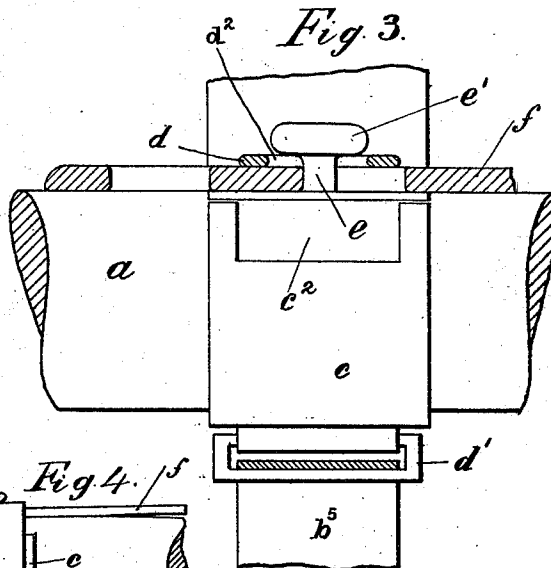
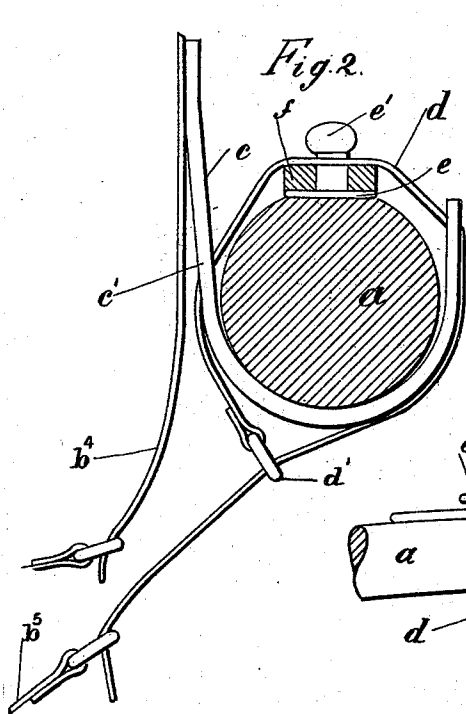
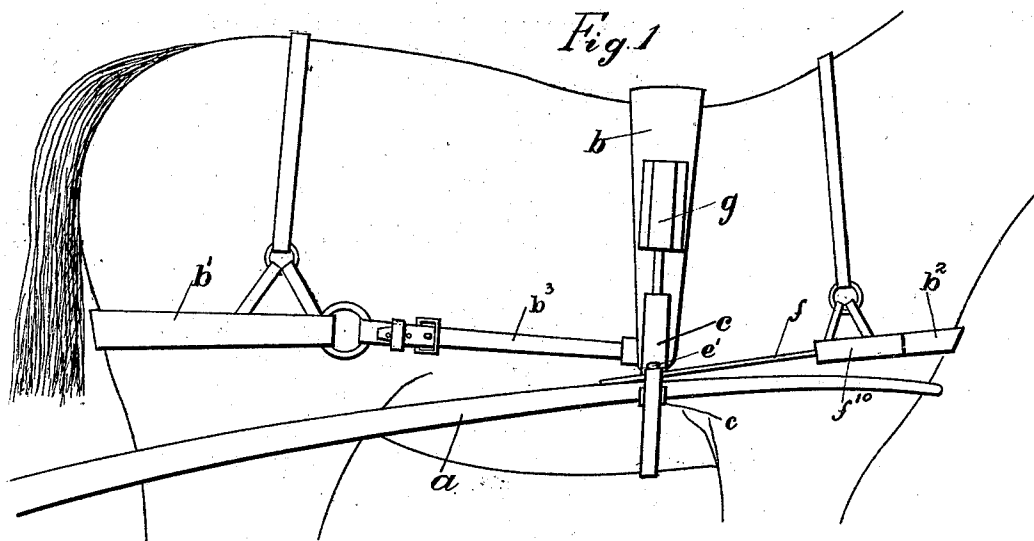


(No Model.)

L. H. CREAMER.
HARNESS.

No. 519,149.

Patented May 1, 1894.



WITNESSES:
A. L. De Heeruw
Chas. J. Welch

Fig. 6

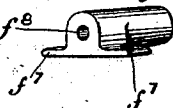
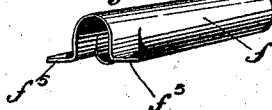


Fig. 7



INVENTOR
Lewis H. Creamer
BY *Charles J. Welch*
ATTORNEYS

UNITED STATES PATENT OFFICE.

LEWIS HARLAN CREAMER, OF MECHANICSBURG, OHIO.

HARNESS.

SPECIFICATION forming part of Letters Patent No. 519,149, dated May 1, 1894.

Application filed November 27, 1893. Serial No. 492,077. (No model.)

To all whom it may concern:

Be it known that I, LEWIS HARLAN CREAMER, a citizen of the United States, residing at Mechanicsburg, in the county of

Champaign and State of Ohio, have invented certain new and useful Improvements in Harness, of which the following is a specification.

My invention relates to improvements in harness, and it especially relates to improvements in devices for hitching horses or other animals to vehicles.

The object of my invention is to provide novel means for attaching animals to vehicles so that the operation of hitching or unhitching shall be reduced to the minimum.

A further object of my invention is to provide novel means for equalizing the draft on vehicles while dispensing with the ordinary whiffle-tree or single-tree.

My invention consists in the various constructions and combinations of parts herein-after described and set forth in the claims.

In the accompanying drawings, Figure 1 is a side elevation illustrating my improved harness in operation. Fig. 2 is a sectional view of a portion of the same where it is attached to the shaft. Fig. 3 is a side elevation of the same. Fig. 4 is a side elevation of the same showing a slight modification. Figs. 5 to 7, inclusive, are details of the tugs or traces, and the device for attaching them to the harness to equalize the draft.

Like parts are represented by similar letters of reference in the several views.

In the said drawings, *a* represents a shaft of an ordinary vehicle.

b is the saddle of the harness, *b'* the breeching and *b²* the breast strap or collar, all of which are of the usual construction. Attached to the saddle *b* at each side are my improved shaft holders, which consist of open metallic hooks *c*, each provided at one side with a slotted opening *c'*, through which a clamping strap *d* is adapted to be passed; said open shaft holder being further provided at its outer end with a notched or recessed opening *c²*, substantially of the same width as the opening *c'*.

The shaft *a* is provided with a fastening cleat *e*, preferably provided with a T-shaped head *e'*, and to this cleat *e'* the tugs *f* are adapted to be attached. These tugs *f* are

connected at their forward ends to rods *f'* which extend into spring cases *f²*, having springs *f³* therein; the rods being provided with enlarged ends *f⁴* adapted to bear on the springs *f³* so that a yielding pressure is applied to the tugs or traces *f*. These spring cases *f²* preferably consist of a metallic tube, one end of which is sheared back for a short distance and provided with an incision through its periphery for a portion of its circumference, as shown in Fig. 7, to form flanges *f⁵*; said tube being adapted to slip over a plug *f⁶*, having similar side flanges *f⁷*. The plug *f⁶* is further provided with a central perforation *f⁸*, through which the rod *f'* is adapted to pass. The flanges *f⁵* are adapted to fit over the flanges *f⁷* of the plug, and when in position the said flanges are secured together and the spring cases secured to the breast collar *b²* by rivets *f⁹*, which pass through the respective flanges and through the collar. The spring cases are further secured to the collar and the whole covered up so as to present an attractive appearance by a leather casing *f¹⁰*, which is passed around said spring case and stitched at each side to the breast collar. The shaft holder *c* is further connected to the breeching *b'* by means of a hold-back strap *b³*, the construction being such that the ordinary hold-back strap may be employed for this purpose, the difference being that instead of being connected to the shafts, as in the ordinary manner, these straps are connected to the shaft holders.

The saddle *b* is connected in the usual way to the belly-band *b⁴*, while the clamping strap *d*, after being looped about the shaft and holder, as hereinafter more fully described, is buckled to the shaft band at *b⁵* in the usual way. The operation of hitching and unhitching the horse as thus described is as follows:—The shafts are laid into the open hook-shaped shaft holders *c*, the construction being such that the shafts may be placed directly into the same from the top instead of being placed laterally through the same in the usual manner. The tugs *f* are hooked over the T-shaped end *e'* of the cleat *e*, after which the clamping strap *d* is passed over the tug into the notched opening *c²* of the shaft holder and through a metallic loop *d'* at the bottom of said shaft holder, then buckled to the shaft

band b^5 in the usual manner. If desired, the clamping strap d may be provided with a slotted opening d^2 , adapted to pass over the T-shaped end e' of the cleat e , (as shown in Fig. 3) though it will be found to operate quite as well by placing the clamping strap d in front of the T-shaped end e' of said cleat, as shown in Fig. 4. This constitutes the whole operation of hitching up, the unhitching being simply a reversal of the operation. The construction and adjustment of the traces are such that the unequal draft caused by the movement of the horse is equalized by the springs, the use of a whiffle-tree being entirely dispensed with. I have shown in Fig. 1 a spring case g , similar to the one f^2 , attached to the back-band, the spring in this case being used as a medium for connecting the shaft holder c . This construction, while desirable, is not necessary in the operation of my invention.

Having thus described my invention, I claim—

1. In a harness, a saddle, a breeching, a shaft holder connected to said saddle, and a connection from said holder to said breeching, said shaft holder being open at the top and provided with oppositely-arranged openings in the sides thereof, a clamping strap extending through said openings, tugs or traces, a projection with which said tugs or traces engage, said clamping strap being adapted to clamp said tugs or traces and also engage the projection which furnished the point of attachment for said tugs or traces, substantially as specified.

2. In a harness, a saddle, a breeching, and a breast collar, open shaft holders on said saddle, a connection from said shaft holders to said breeching, spring cases secured to said breast collar, springs in said spring cases, tugs or traces secured to said springs, said tugs or traces being adapted to be connected to the shafts of a vehicle in proximity to said holders clamping straps passing through openings on opposite sides of said shaft holders so as to clamp said tugs or traces to said shafts

and also engage the projections to which the tugs or traces are attached, substantially as specified.

3. In a harness, a breast collar, tugs or traces, spring cases containing springs to which said traces are connected, said spring cases consisting of a metallic tube formed at one end with projecting flanges, and a plug adapted to fit in said tube having similar flanges, and fastening devices extending through said flanges to fasten said spring cases to said breast collar, substantially as specified.

4. In a harness, a breast collar, spring cases consisting of sheet metal tubes having one end sheared and bent, as described, to form laterally-extending flanges, a metallic plug having a central perforation adapted to fit into said tube, and also provided with flanges which extend coincident with the tube flanges, means for securing said flanges together and to the breast collar, a leather sheathing over said spring cases also secured to said breast collar, and springs in said cases to which the tugs or traces are connected, substantially as specified.

5. In a harness, an open hook-shaped shaft-holder provided on opposite sides with slotted and recessed openings, as described, a clamping strap passing through said openings so as to be looped around said shaft holder and clamp a vehicle shaft therein, a spring-connected trace adapted to engage a projection on the vehicle shaft in proximity to said shaft holder, a shaft band below the shaft holder having a loop through which the clamping strap is adapted to be secured whereby the trace is clamped to the shaft within said shaft holder with the clamping strap engaging the projection to which said trace is secured, substantially as specified.

In testimony whereof I have hereunto set my hand this 23d day of November, A. D. 1893.

LEWIS HARLAN CREAMER.

Witnesses:

WM. C. PANGBORN,
C. S. PANGBORN.