

(No Model.)

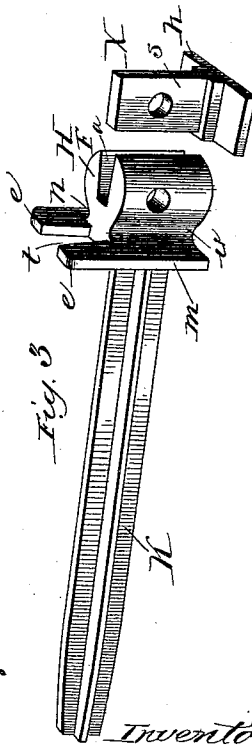
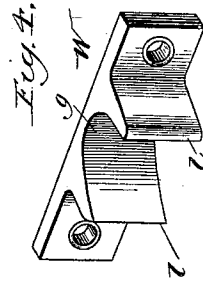
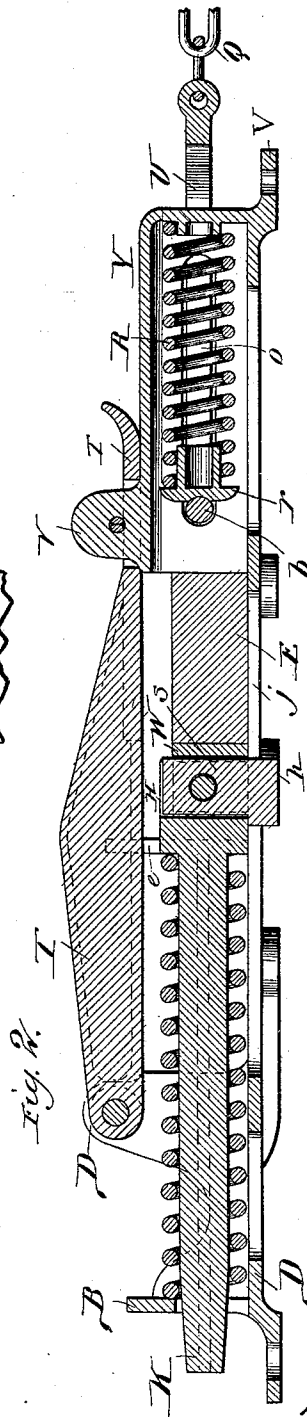
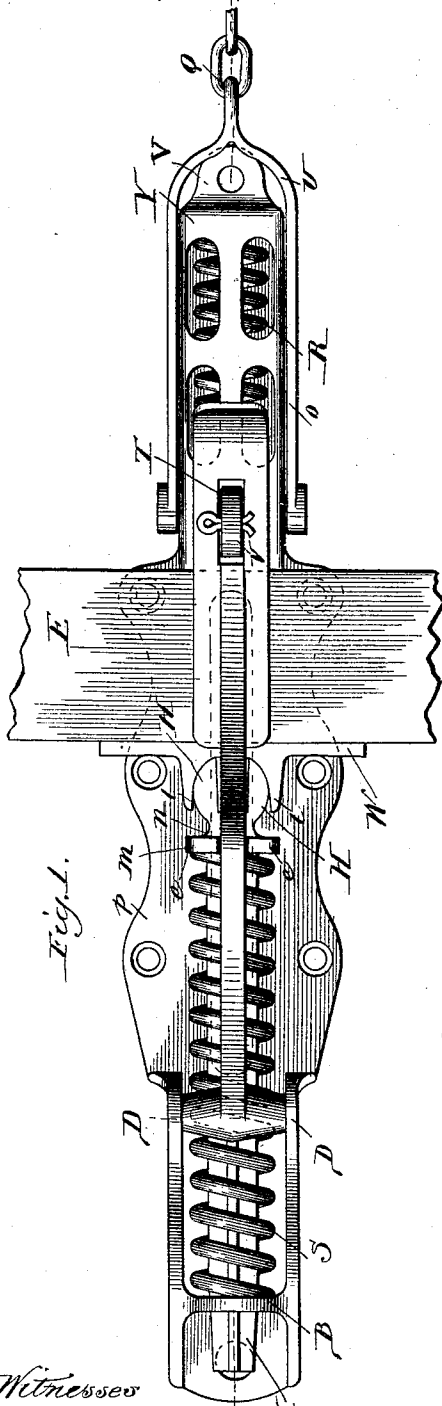
2 Sheets—Sheet 1.

H. BARBER.

DRAFT ATTACHMENT FOR VEHICLES.

No. 482,973

Patented Sept. 20, 1892.



Witnesses

W. Rossiter
Frederick A. Mills,

 Inventor
Hiram Barber

H. BARBER.

DRAFT ATTACHMENT FOR VEHICLES.

No. 482,973

Patented Sept. 20, 1892.

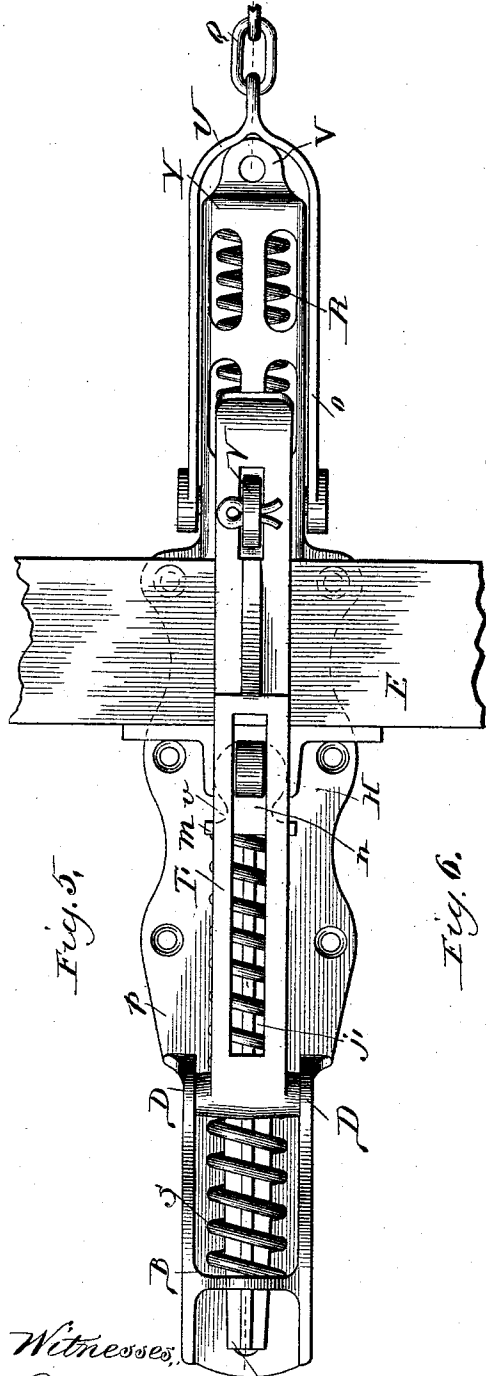


Fig. 5.

Fig. 6.

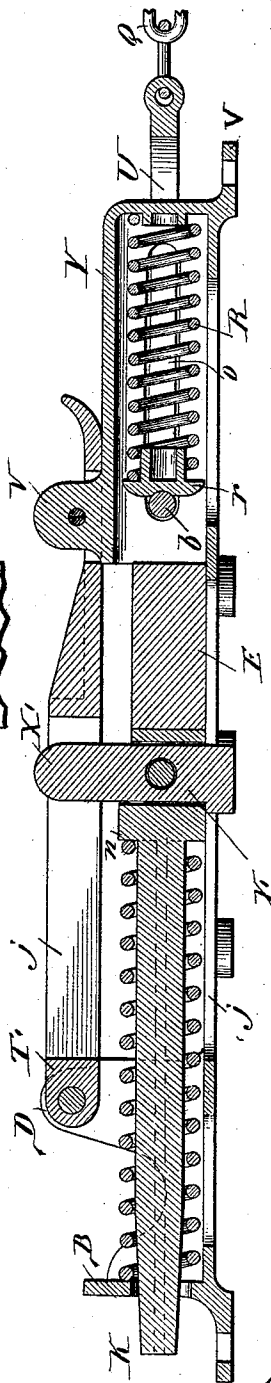


Fig. 8.

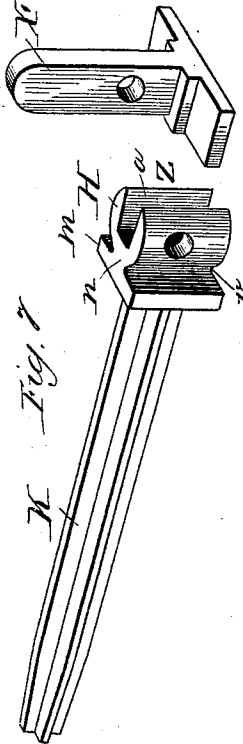
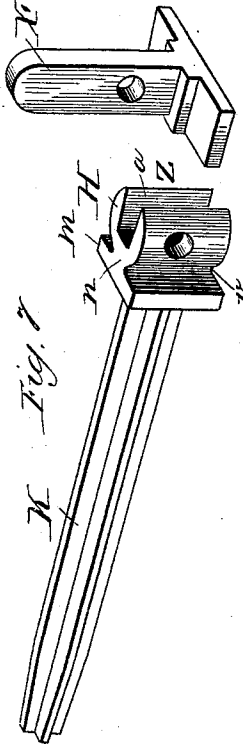


Fig. 7.



Witnesses,
O. Davis
Fred. H. Mills.

Inventor
Hiram Barber

UNITED STATES PATENT OFFICE.

HIRAM BARBER, OF CHICAGO, ILLINOIS.

DRAFT ATTACHMENT FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 482,973, dated September 20, 1892.

Application filed March 7, 1890. Serial No. 343,014. (No model.)

To all whom it may concern:

Be it known that I, HIRAM BARBER, of Chicago, in the county of Cook and State of Illinois, have invented an Improvement in Draft Attachments for Vehicles, of which the following is a specification.

In the drawings, Figure 1 is a plan view of the preferable form of my spring-draft attachment and tongue-support herein described. Fig. 2 is a longitudinal vertical sectional view of the preferable form of my spring-draft attachment and tongue-support herein described on the dotted line 1 1. Fig. 3 is a view in perspective of the head or bearing block, the engaging shank thereof, and of the bolt holding the head or bearing block in place in the preferable form of my spring-draft attachment. Fig. 4 is a view in perspective of the evenner-plate in my spring-draft attachment herein described. Fig. 5 is a plan view of a modified form of my spring-draft attachment and tongue-support herein described. Fig. 6 is a vertical longitudinal sectional view of the modified form of my spring-draft attachment and tongue-support herein described on the line 2 2. Fig. 7 is a view in perspective of a head or bearing block and the engaging shank thereof and which is designed for use in either form of my spring-draft attachment herein described. Fig. 8 is a view in perspective of the bolt for holding the head or bearing block in the modified form of my spring-draft attachment herein described.

In Fig. 1 the letters *p*, B, D, D, Y, and T indicate, respectively, the bottom plate, forward buffer, ears, rear casing, and top bar forming the case or frame, and the letters S, R, W, U, Q, and E the evenner-spring, the tongue-support spring, evenner-plate, clevis-chain, and evenner in my spring-draft attachment and tongue-support.

In Fig. 2 the letters *j* *o* *b* *r* indicate, respectively, the slot in the bottom plate *p*, the slot in the side wall of the casing Y, the clevis-bolt, and core-block in my spring-draft attachment and tongue-support, and the letter V the lug on the upper surface of the casing Y.

In Fig. 3 the letters H, *n*, *m*, and K are used to indicate, respectively, the cylindrical section, neck, upright plate, and shank of the head or bearing block; *v*, the vertical recess therein, and X the bolt holding the same in

place in the preferable form of my spring-draft attachment. The letters *ee* are used to indicate the ears projecting from the upper edge of the plate *m*, and *t* the track formed thereby, while *a* is used to indicate the chamber in the cylindrical section, and *s* and *h* are used to indicate, respectively, the stem and head of the bolt X.

In Fig. 4 the letters *l*, *l*, and *g* are used to designate the lugs projected from and the vertical groove in the front face of the evenner-plate W.

In Figs. 5 and 6 the letters T' and *j'* are used to designate the top bar and the longitudinal slot therein in the modified form of my spring-draft attachment.

In Figs. 6 and 8 the letter X' is used to designate the bolt holding the head or bearing block in place, the upper section of the stem of which bolt operates in the slot *j'* in the modified form of my spring-draft attachment.

In Fig. 3 the head or bearing block is designated by the letter F and in Fig. 7 by the letter Z.

The purpose of my invention is to secure a yielding connection between the point of draft upon a wagon or other vehicle and the draft-animal. Such a connection is calculated to promote the ease and comfort of the draft-animal. It is a great assistance in starting heavy loads and also takes off the shock or concussion on the shoulder of the animal when the wagon or vehicle is passing over rough or uneven roads.

My invention belongs to a class in which a coil-spring is compressed in front of an evenner or doubletree, as shown in Patents No. 370,009, dated September 13, 1887; No. 411,851, dated October 1, 1889, and No. 415,318, dated November 19, 1889. The preferable size of the spring is about ten (10) inches in length and two (2) inches in diameter. Experience has shown these to be the proper dimensions in order to secure the necessary amount of compression. When in position, the evenner and springs are held in a metallic case or frame, the forward end of the case or frame forming a chamber in which the forward end of the spring is held and into which the spring is driven and compressed by the forward movement of the evenner. A head or bearing block provided with a shank extending forward from the front

face thereof into the core of the spring is placed between the rear end of the spring and the front face of the evener.

In the devices heretofore in use several practical difficulties have been encountered.

When the spring is weak, the shank of the head or bearing block is liable to be driven against the rear face of the forward end wall of the case or frame. The shock thus occasioned renders the machine a positive disadvantage to the draft-animal. If the shank be shortened to obviate this difficulty, the spring is liable to buckle. When the evener is held in position in the case or frame by an evener-bolt, this bolt is in the way or liable to be lost when the evener is used in detached service. When the evener is held in place by engaging lugs projected from the rear face of the evener-plate, the evener is given too much "thrash" or freedom of movement in the case or frame. These lugs also interfere with the ready insertion or removal of the evener where the case or frame opens at the top.

In my spring-draft attachment herein described I extend the shank of the head or bearing block forward through the coil-spring and through an opening prepared in the front end wall of the case or frame. I thus avoid all possibility of the "buckling" of the springs, and by a proper adjustment of the length of the chamber in which the forward end of the spring is held the spring, however weak, will always constitute a cushion, against which the forward face of the head or bearing block will be driven. This construction also affords a higher degree of strength and security than is formed when the forward end of the spring is held in place only by the outer walls of the forward end of the case or frame. The upper wall of the forward end of the case or frame may also be dispensed with, any upward movement of the forward end of the spring being prevented by the shank of the head or bearing block. The process of manufacture is also rendered less difficult.

I have sought also in my present device to simplify the method of holding the evener in place. To this end I attach to the front face of the evener, an evener-plate provided with a vertical groove on its front face semicircular in cross-section and of sufficient width and depth to receive and embrace the rear convex section of the head or bearing block far enough to prevent any sliding or lateral movement of the double tree or evener when the same is in operation. The sides of the vertical groove in the front face of the evener-plate are formed by two forwardly-projecting lugs placed parallel with each other and made integral at the base thereof with the front face of the evener-plate.

In construction the head or bearing block may be said to consist of a perpendicular cylindrical section united to an upright plate by a narrow neck on the central perpendicular line of each with an engaging shank pro-

jected from the center of the front face of the upright plate and at right angles thereto. The rear convex face of the head or bearing block is made to conform to the vertical groove in the evener-plate and the lugs projected from the face thereof. The neck uniting the cylindrical section of the head or bearing block to the upright plate is of sufficient length to leave a vertical recess between the upright plate and the cylindrical section on each side of the head or bearing block for the reception of the outer ends of the lugs upon the evener-plate as the evener turns upon the axis of the cylindrical section of the head or bearing block. While the lugs are thus rendered safeguards against any undue lateral motion of the evener, they in no wise interfere with the ready insertion of the same into or removal from the case or frame when the top bar is opened for that purpose. At the same time the evener-bolt is wholly dispensed with. It cannot be doubted that I have thus greatly simplified the method of holding the evener in place, diminished the number of parts, and increased the strength and durability of the machine.

In the construction of the case or frame of my spring-draft attachment herein described I make use of a bottom plate provided with a rear end casing, a front bracket or buffer, two upwardly-projecting ears, and a central longitudinal slot, and also a top bar. The rear casing is made integral with the rear end of the bottom plate, the forward end being open and the rear thereof closed. The chamber thus formed is designed for the spring used to support the tongue in my spring-draft attachment, which spring is inserted into the open front end of the casing and is compressed by means of a bolt and clevis, the bolt being inserted in front of the spring and moving backward in longitudinal slots in the side walls of the casing, while the clevis is attached to the frame of the wagon or vehicle by means of a chain or rod. The tongue of the vehicle may thus be supported nearly upon a level line and has freedom of motion downward to the extent of the compressibility of the spring. The rear casting also serves the purpose of a buffer, against which the rear face of the doubletree or evener is pressed by the backward movement of the head or bearing block. The forward end of the upper wall of the rear casing is provided with a lug, to which the rear end of the top bar is keyed or hinged. The forward end of the case or frame is formed by an upwardly-projecting bracket or buffer extending across and made integral with the forward end of the bottom plate, with a plain rear face perpendicular to the upper surface of the bottom plate. By the forward movement of the evener the forward end of the evener-spring is driven against the rear face of the bracket or buffer, while the shank of the head or bearing block operates in an aperture provided therein, as already explained. At a

proper distance back from the rear face of the bracket or buffer—say about five inches—are located the upward-projecting ears, to which the front end of the top bar is keyed or hinged, one on each outer upper margin of the bottom plate, with which they are made integral at the base. These ears extend above the evener-spring a sufficient distance to afford opportunity to key or hinge the front end of the top bar thereto. The top bar is designed to prevent any upward movement of the head-block or evener and is hinged or keyed at the ends, and the case or frame may thus be readily opened for the insertion or removal of the evener. The bottom plate of the case or frame is provided with a central longitudinal slot extending backward from the ears on the forward end of the plate nearly to the front end of the rear casing. In this slot the lower section of the stem of the bolt which holds the head or bearing block in place has freedom of movement with the forward and backward motion of the head-block. The bottom plate when in position is raised sufficiently from the surface of the tongue of the wagon to permit the free movement of the head of the bolt holding the head-block in place, and which head lies beneath the under surface of the bottom plate. The bolt holding the head-block in place is inserted from below through the slot in the bottom plate into a perpendicular chamber or aperture provided for the upper portion of the stem thereof in the head or bearing block. The upper portion of the stem of this bolt when in place is securely fastened by a rivet passing horizontally through the stem and cylindrical section of the head or bearing block. The head of this bolt, lying beneath the bottom plate and being wider than the slot therein, is effectual to prevent any upward movement of the head or bearing block. When it may be desirable to prevent any lateral movement of the head-block, the same may be provided with ears or upwardly-extending projections upon the outer margins of the upper face thereof, with a sufficient space between the same for the introduction and movement of the lower margin of the top bar when the same is made solid. The top bar will thus be a guide to the head or bearing block and effectually prevent any lateral movement of the same. The same result may be obtained by constructing the top bar with a central longitudinal slot therein and extending the stem of the bolt up through the head or bearing block a sufficient distance. When, therefore, the several parts of my spring-draft attachment are in position, forward draft or pressure upon the evener drives the front face of the head or bearing block against the rear end of the evener-spring and compresses the same upon the shank of the head or bearing block and against the rear face of the forward bracket or buffer, and thus a yielding connection is secured between the draft-animal and the fixed point of draft

upon the wagon or other vehicle. I find there is great advantage in combining the evener-spring and tongue-support. There is economy in this construction. The rear casing, in which the spring which supports the tongue is held, furnishes also a solid rear buffer for the evener, as well as a firm point to which to key or hinge the rear end of the top bar. At the same time the tongue-support increases the advantages derived from the yielding connection furnished by the evener-spring by taking off the downward pressure of the tongue upon the neck of the draft-animal and by reducing the thrash of the tongue to the minimum.

Having explained the purpose, method of construction, and the operation of my spring-draft attachment, what I claim as novel and of my invention, and for which I seek Letters Patent, is—

1. In a spring-draft attachment, the combination of a slotted plate securely attached to the tongue of a wagon and provided with a perforated bracket or buffer made integral with the upper surface of the forward end thereof and having its rear face perpendicular to and at right angles with the central longitudinal line of such plate, a coil-spring, a head or bearing block provided with a convex rear face and also with an engaging shank projected from its front face and passing through the coil-spring and into the aperture in the perforated buffer or bracket and in which coil-spring and aperture such shank has freedom of movement and which head or bearing block has also freedom of movement on the upper surface of such plate while securely attached thereto by means of a bolt the stem of which is inserted from below through the slot in such plate up into the cylindrical section of such head or bearing block, and an evener provided with a vertical groove in the front face thereof to correspond with the convexity of the rear face of such head or bearing block, all arranged or combined substantially as described.

2. In a spring-draft attachment, the combination of the slotted plate *p*, attached to the tongue of a wagon, the perforated buffer *B*, the coil-spring *S*, the cylindrical chambered head *H* and its shank *K*, the bolt *X*, and the evener and evener-plate *W*, having a concave groove *g*, in which the head *H* fits, substantially as specified.

3. In a spring-draft attachment, the combination of the slotted plate *p*, provided with ears *D D*, the perforated buffer *B*, the casing *Y*, having the lug *V* on the upper surface thereof and all made integral with the upper surface of such plate, the coil-spring *S*, the cylindrical head or bearing block *H*, provided with a shank *K*, the bolt *X*, the evener-plate *W*, provided with a concave recess for the block *H*, the evener *E*, and top bar *T*, all arranged and combined substantially as set forth.

4. In a spring-draft attachment, the combi-

nation of the slotted plate *p*, attached to the
tongue of a wagon and provided with the
ears *D D*, the perforated buffer *B*, and the cas-
ing *Y*, having the lug *V* on the upper surface
5 and the slots *O O* in the side walls thereof,
the coil-spring *S*, the head or bearing block
F, provided with the shank *K* and the ears *e*
e, the bolt *X*, the evener-plate *W*, the evener
E, the top bar *T*, the spring *R*, the clevis-bolt

b, the clevis *U*, and chain *Q*, attached to the 10
frame of the wagon, all arranged and com-
bined substantially as specified.

In witness whereof I have hereunto set my
hand this 3d day of March, A. D. 1890.

HIRAM BARBER.

In presence of—

TIMOTHY D. HURLEY,
BARBARA SCHOTTLER.