

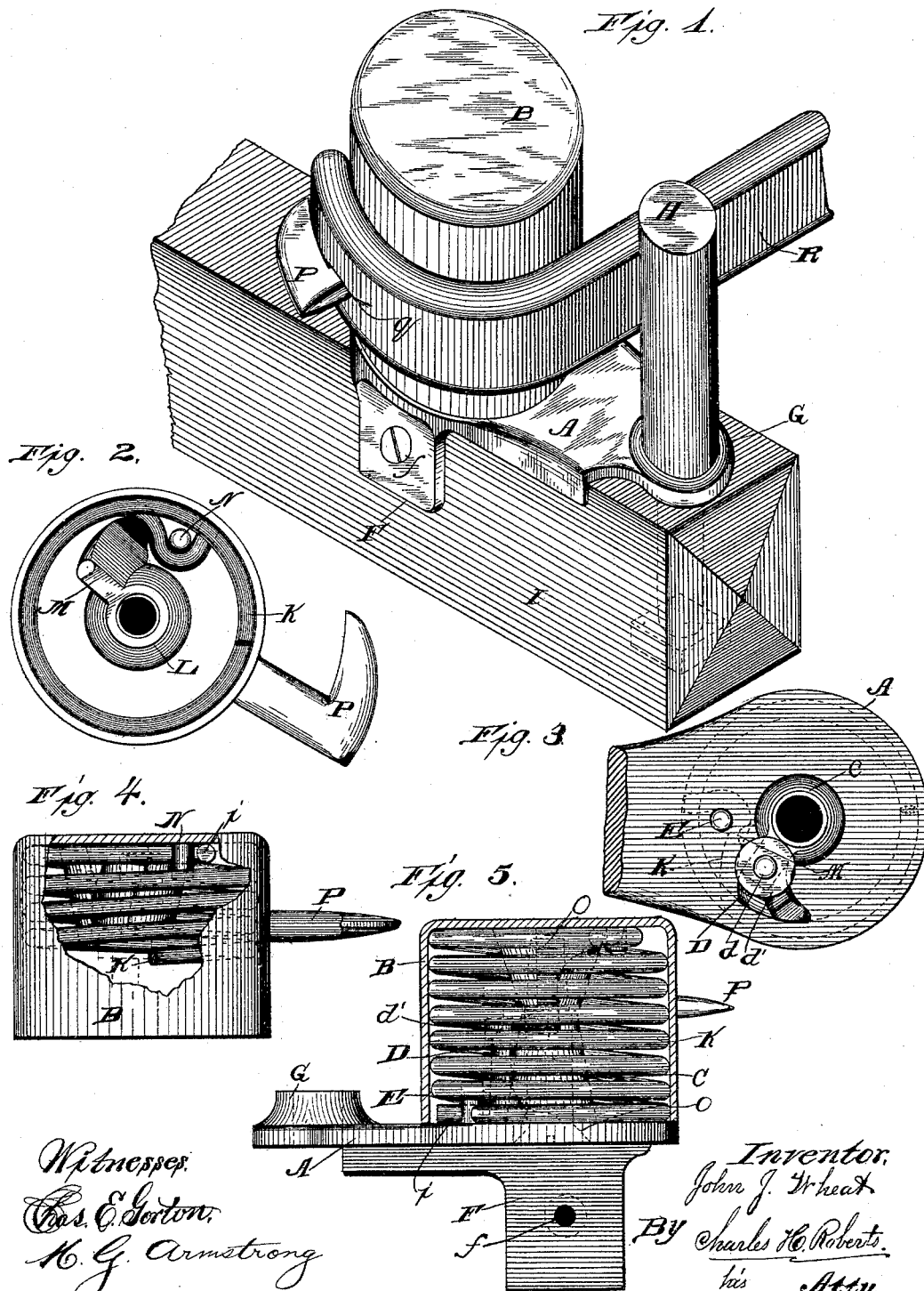
(No Model.)

2 Sheets—Sheet 1.

J. J. WHEAT.
TRACE HOLDER.

No. 489,057.

Patented Jan. 3, 1893.



Witnesses:
Chas. E. Gordon.
H. G. Armstrong

Inventor,
John J. Wheat
BY Charles H. Roberts.
his Atty.

(No Model.)

2 Sheets—Sheet 2.

J. J. WHEAT.
TRACE HOLDER.

No. 489,057.

Patented Jan. 3, 1893.

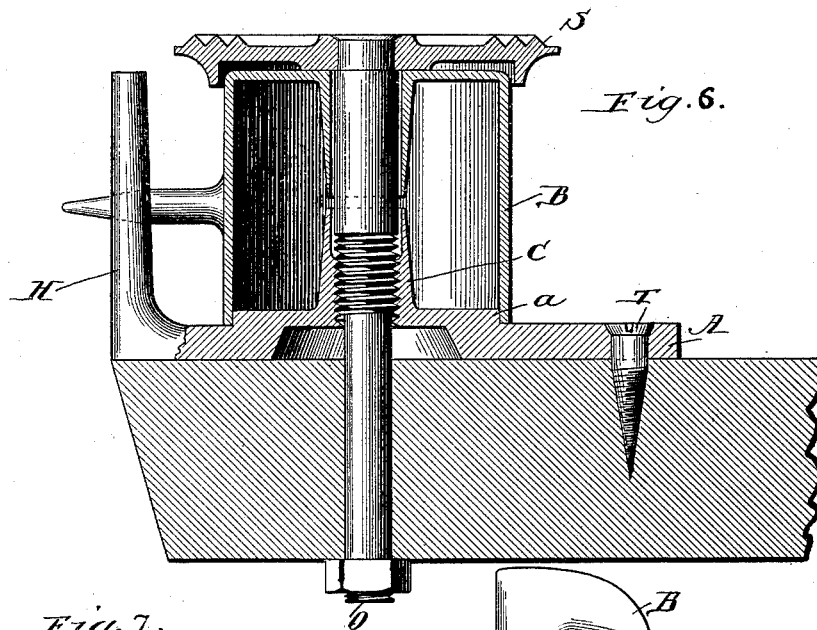


Fig. 6.

Fig. 7.

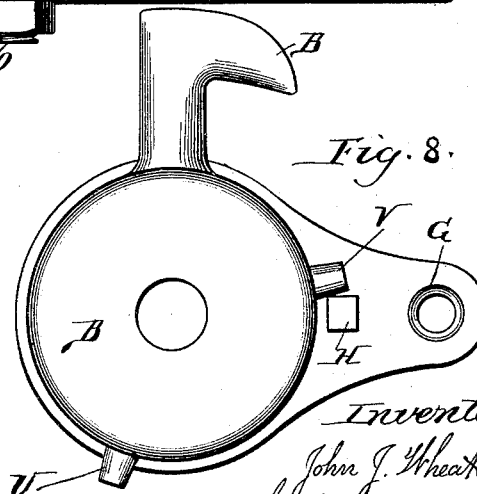
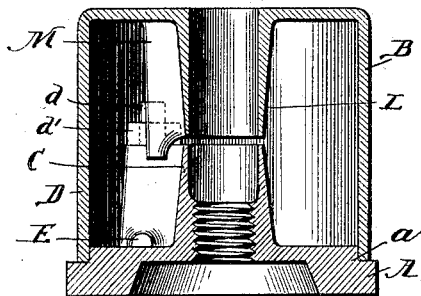


Fig. 8.

Witnesses
W. Rossiter
H. C. Armstrong.

Inventor
John J. Wheat
By Charles H. Roberts
his atty.

UNITED STATES PATENT OFFICE.

JOHN J. WHEAT, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF TWO-THIRDS
TO FREDERICK H. KILBOURNE AND HOWARD H. HITCHCOCK, OF CHI-
CAGO, ILLINOIS.

TRACE-HOLDER.

SPECIFICATION forming part of Letters Patent No. 489,057, dated January 3, 1893.

Application filed June 1, 1891. Serial No. 394,658. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. WHEAT, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Trace-Holder, of which the following is a specification.

My invention relates to improvements in trace-holders in which the draft between the horse's shoulder and the vehicle to be drawn is equalized by means of an interposed coiled spring, and the objects of my improvement are, to reduce the strain and friction upon the trace at its point of attachment to protect the spring from the weather and dirt of the road; to furnish a more secure fastening than heretofore for the trace, and to so construct the entire device for these purposes as to make it ornamental and to make the device more compact and practical than previous devices for interposing a coiled spring for such purposes have been. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing the device and the manner of attaching the trace. Figs. 2 and 3 are plans. Fig. 4 is a side view partly in section. Fig. 5 is a side elevation partly in section. Fig. 6 is a vertical section of the device. Figs. 7 and 8 are sections showing modifications.

Similar letters refer to similar parts throughout the several views.

The base plate A and cap B form the framework of my device. On the inner side of the base plate A are three bosses or lugs C D and E, as shown in Figs. 3 and 5, preferably cast integral with the base plate; the lugs C and D may be cast or connected together, as shown in Fig. 2, to secure greater rigidity and staunchness of the parts. The top of the lug D has a portion *d* projecting above the top of the companion lug C and wearing a leather collar *d'*, the use of which is to prevent the rattling of the lugs D and M. Depending from the base plate A is a projection F with a hole for a screw *f*, by means of which the device may be fastened to the cross-bar or thill of the vehicle, or other suitable point of attachment, as shown in Fig. 1. A small pin or lug

E is adapted to receive and hold the hooked end of the spring K. A boss G is located on one side of the base plate, perforated to receive the standard H which may project slightly above the cap B.

Coiled about the lugs of the base plate A and attached to the lug E of the base plate by one of its curved ends *i*, *i* is a coiled wire spring K of any desired resistance or metal, but preferably of steel wire of a gage suitable to furnish the desired resistance. This is coiled openly about the lugs as shown in the drawings so that when compressed or when released from pressure the adjacent coils will not rattle from contact with each other; both ends of this wire are hooked to engage with the lugs E and N.

The cap B is designed to fit down over and inclose the coiled wire K and the lugs on the base plate to cover them from view and to protect them from weather and the dirt of the road.

The cap B is provided with lugs L, M, and N, preferably cast integral with the cap and similar to those on the base plate, the lug L having the shape of a truncated cone and depending about three fourths of an inch from the top of the cap as shown in Fig. 4; the lug M depending slightly and about one fourth of an inch below the lug L. The lug M differs from the lug D on the base plate in having no leather washer or collar. The lug N is adapted to hold the hooked end of the coiled wire in the same manner as it is held by the lug E on the base plate.

The lug C of the base plate is drilled and the lug L of the cap is drilled and tapped to receive the bolt O having a head *o* which may be countersunk in the base plate, as in Fig. 5, or the bolt may extend entirely through the cross-bar I, as in the modification shown in Fig. 6. This bolt O serves to hold the base plate and cap together and also, by its pressure upon them to compress the spring into the cap which incloses it.

Projecting from the outside of the cap B and preferably integral therewith is a cock-eye P upon which the loop *q* of the trace R is fastened in the usual manner. The spring K is so adjusted upon the lugs E and N within

the cap, that the said cockeye always occupies when at rest such a position that the trace is curved when taut against the outer circumference of the cap B, and the spring is sufficiently strong so that in ordinary driving a portion of the trace between the loop *q* and the standard H will always bear upon the outer circumference of the cap B, as shown in Fig. 1, thus preventing strain and friction directly upon the cockeye and the loop *q*, and distributing said friction and strain over the bent portion of the trace and over a portion of the circumference of the cap B. The cap B is really the stem of the cockeye P expanded to form a protecting cap or cover for its contents. The standard H serves as a stop preventing the cockeye from being turned too far by an unusual strain upon the trace.

In a modified form of my device as seen in Fig. 6, S represents a step mounted upon the top of the cap B and secured thereon by a thread on the bolt O which supports it. In this modified form the base plate is fastened to the cross-bar by the bolt O, and the screw T in the place of the depending lug F.

Fig. 7 shows a modified form having a raised collar *a* on the base plate and within the inner circumference of the cap, to protect the spring more effectually from dust or from dampness in washing the vehicle.

The adjustment and operation of my device are as follows: The spring is adjusted on the base plate by hooking one end over the pin or lug E and the other hooked end of the spring over the corresponding lug N of the cap B. The spring is preferably so constructed that a slight endwise pressure upon it is necessary to force it into the cap thus rendering it noiseless. The lugs E and N are so adjusted relatively to each other and to the lugs D and M that when the spring is hooked to the lugs E and N the lugs D and M are opposite each other and a slight strain upon the spring is necessary in adjusting the cap to the base plate to allow the lugs D and M to pass each other. When the lugs D and M have passed each other, as shown in Figs. 5 and 7, and the cap is closed down upon and fastened upon the base plate by the operation of the bolt O which screws into the cap, the lugs D and M will be found to have, in slipping past each other, locked the spring K in a slightly taut condition, thus holding the spring so that the resistance is about equal to the amount of strain necessary to move the vehicle. An advantage of keeping the spring in a taut condition is that the horse can be hitched closer to the load and the trace more snugly attached, as the horse does not need to travel a distance to take up the slack in the spring, when the spring is taut. The cap being merely an expansion of the stem of the cockeye and a part thereof, it is apparent that the cap B, cockeye P, and trace *q*, when the latter is attached and tension applied, will move synchronously together; and while the curved outline of the cap is pressed by the

trace and divides with the cockeye the strain of the pull on the trace, there is no friction, as in previous devices, by reason of the cockeye's being movable while the cap is stationary. By having the trace and cockeye move in unison with the cap, the trace is not subject to that constant rubbing against the periphery of the cap when the cockeye moves to and fro in its slot, which is noticed in previous devices. Also, as, by my device, a slot is dispensed with, no cover for the slot is required.

The standard H instead of occupying a position in front of the cockeye, as in Fig. 1, may be placed on the opposite side of the cap, as in Fig. 8, and a boss or projection U may be cast or otherwise fixed upon the outside of the cap to engage with it to form the front stop to prevent too great a revolution of the cockeye by an unusual strain upon the spring. A boss or projection V, may be similarly fixed upon the outside of the cap to serve as a back-stop in lieu of the engagement of the lug M and collar *d'* for that purpose in the interior of the cap B.

The strength of the spring should be so adjusted to the draft that the cockeye will engage with the standard H only in cases of unusual strain upon the trace, its normal position when at rest being shown in Fig. 1, and its position under ordinary strain varying from its said position in Fig. 1 to a point about midway between the said position in Fig. 1 and the extreme limit of its sweep.

I do not herein make any claim to the additional subject matter shown in Fig. 6, as I desire to include such matter in another application.

What I claim, and desire to secure by Letters Patent of the United States is—

1. In a trace-holder provided with a spring to equalize the draft, a cock-eye having a stem broadened into a cap or covering to inclose and protect said spring, substantially as described and shown.

2. In a trace-holder the combination of a spring to equalize the draft, a cap or cover attached to the spring to conceal and protect the same, said cap or cover being formed integral with and adapted to move synchronously with a cock-eye, substantially as described and shown, and for the purpose specified.

3. In a trace-holder the combination of a draft equalizing spring, a cock-eye having a stem broadened into a cap or covering adapted to inclose and protect the draft equalizing spring, and a base-plate having a raised collar, substantially as described and shown.

4. In a trace-holder provided with a base-plate A, a spring K, a closed cap B, and means to fasten the spring within the cap and between the cap and base plate, the combination of the lugs D and M arranged to meet to form a back stop to keep the spring always taut, substantially as described and shown.

5. In a trace-holder having the base plate A, the cap B with cockeye attached, the spring

K, and the lugs *d* and N, arranged within the cap to meet and form a back stop, and the collar *d'*, to deaden the sound of the meeting parts, all substantially as described and shown and for the purposes specified.

6. In a trace-holder provided with a spring adapted to equalize the draft, and an integral cap and cockeye adapted to be moved synchronously by a strain on the trace, the boss V in combination with the standard H to form a back-stop, substantially as described and shown.

7. In a trace-holder provided with a spring

adapted to equalize the draft and an integral cap and cockeye adapted to be moved synchronously by a strain on the trace, the boss U in combination with the standard H to form a front stop, substantially as described and shown.

8. In a trace-holder, the base plate A, cap B, bolt O, cockeye P, and spring K, when arranged substantially as described and shown.

JOHN J. WHEAT.

Witnesses:

NATHAN M. FREER,
SAMUEL DESPRES.