

(No Model.)

C. BISHOP & O. D. MILLER.
SHAFT SUPPORT.

No. 414,186.

Patented Nov. 5, 1889.

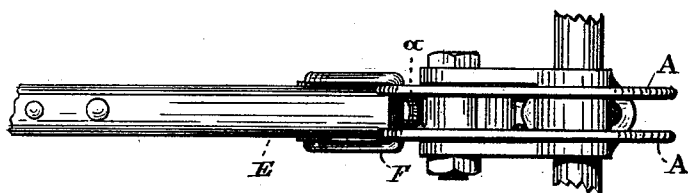


Fig. 1

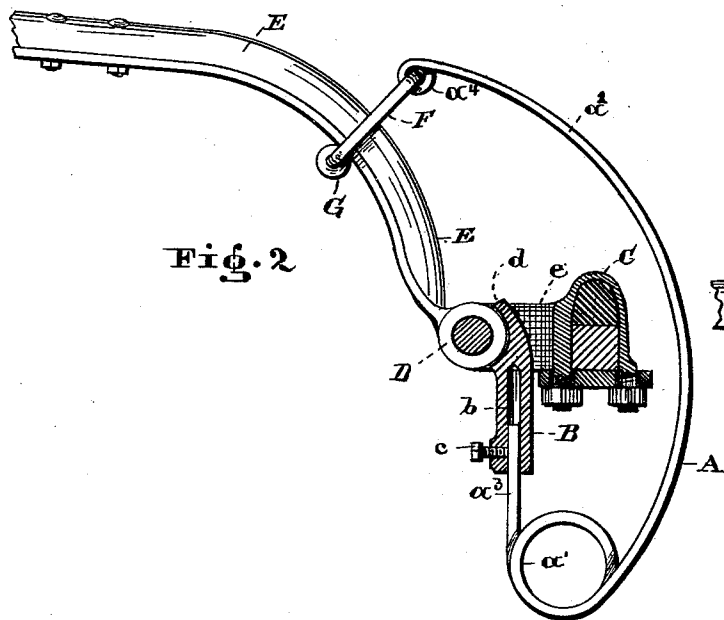


Fig. 2

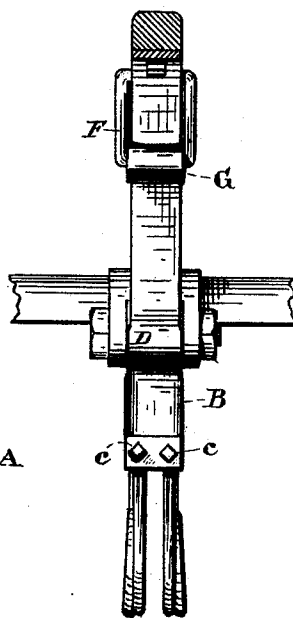


Fig. 3

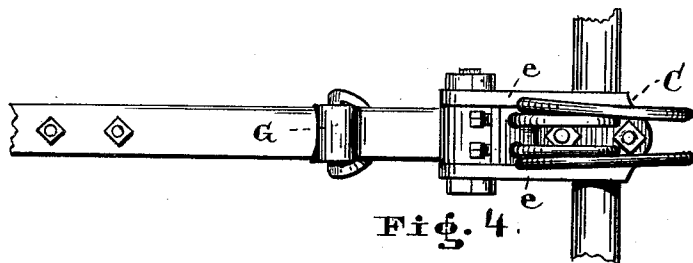


Fig. 4

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UNITED STATES PATENT OFFICE.

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SHAFT-SUPPORT.

SPECIFICATION forming part of Letters Patent No. 414,186, dated November 5, 1889.

Application filed August 26, 1889. Serial No. 322,050. (No model.)

To all whom it may concern:

Be it known that we, CHARLES BISHOP, of Cleveland, in the county of Cuyahoga and State of Ohio, and OLIVER D. MILLER, of Brooklyn, in the county of Cuyahoga and State of Ohio, both citizens of the United States, have invented new and useful Improvements in Supporting Shaft-Springs and Anti-Clip-Rattler or Thill-Couplings; and we do hereby declare that the following is a full, true, and exact description thereof.

Our invention relates to means for supporting buggy or vehicle shafts and for the purpose of preventing rattling in the clip or thill-coupling thereof in connection with the axle.

The improvement consists in the peculiar construction as well as in the adjustability thereof for being set according to the conditions required.

That the invention may be fully understood, reference will be had to the following specification and the accompanying drawings, in which—

Figure 1 is a plan view of said shaft-support and anti-rattling thill-coupling. Fig. 2 is a partial side view and section of the same. Fig. 3 is an inner face view thereof, and Fig. 4 represents the under side view.

Like letters of reference denote like parts in the drawings and specification.

In this case a single shaft only is set forth to avoid the complexity of showing the duplication of the invention in connection with double shafts or thills. The device substantially consists of one or more coiled springs, anti-friction rollers, an anti-rattler thill-coupling, and a socket bearing or brace, as herein-after described.

As shown in Figs. 1 and 2, preferably two or a double coiled spring A are or is used—that is, if two springs are used, then the same may be bent, as shown at *a*, which makes a double spring. Each side is coiled, as shown at *a'*. Thus a long arm *a*² and a short arm *a*³ is formed of each side or spring. The arms *a*³ are inserted into the sockets *b* of the bearing B, as seen in Figs. 2 and 4. Said bearing has set-screws *c c* extending into said socket, to render said arms adjustable therein. The upper part *d* of said bear-

ing projects between the lugs *e* of the thill-coupling or clip C, and partly embraces the hinge D of the shaft E. (See Fig. 2.) On the long arm *a*² is formed an eye at *a*⁴, into which is placed the loop F with the anti-friction roller G, Figs. 1 and 2. As above stated, the sides may or may not connect at *a* without departing from the nature of this invention. The loop F in every instance will serve equally well for a guide of the roller G, whereby the frictional contact upon the shaft is reduced and scratching upon the painted and varnished parts thereof prevented. According to the extent to which the ends *a*³ are inserted into the socket-bearing B, more or less tension can be given to the springs A for the purpose of counteracting or cushioning the vibrating motions, which in shafts without support will soon wear out the hinged connection with the clip and cause a rattling noise of the shaft or shafts.

It is the force of the springs A which holds the bearing B in place—that is, upon the hinge D, as shown in Fig. 2—and by means of the adjustable connection of the ends *a*³ within said bearing said force can be regulated when necessary, depending upon the condition or tension of the springs and the required position of the thills.

What we claim, and desire to secure by Letters Patent, is—

1. In combination with vehicle-shafts and the thill-couplings thereof, one or more coiled springs provided at one end with an adjustable socket-bearing, and at the other a loop with anti-friction roller, constructed and arranged substantially as and for the purpose set forth.

2. In combination with the shaft E and thill-coupling C, the spring or springs A, provided at one end with an adjustable socket-bearing B, embracing the hinge D, and at the other with a loop F and roller G, in connection with the said shaft, constructed and arranged substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES BISHOP.
OLIVER D. MILLER.

Witnesses:

H. E. McMILLIN,
W. H. BURRIDGE.