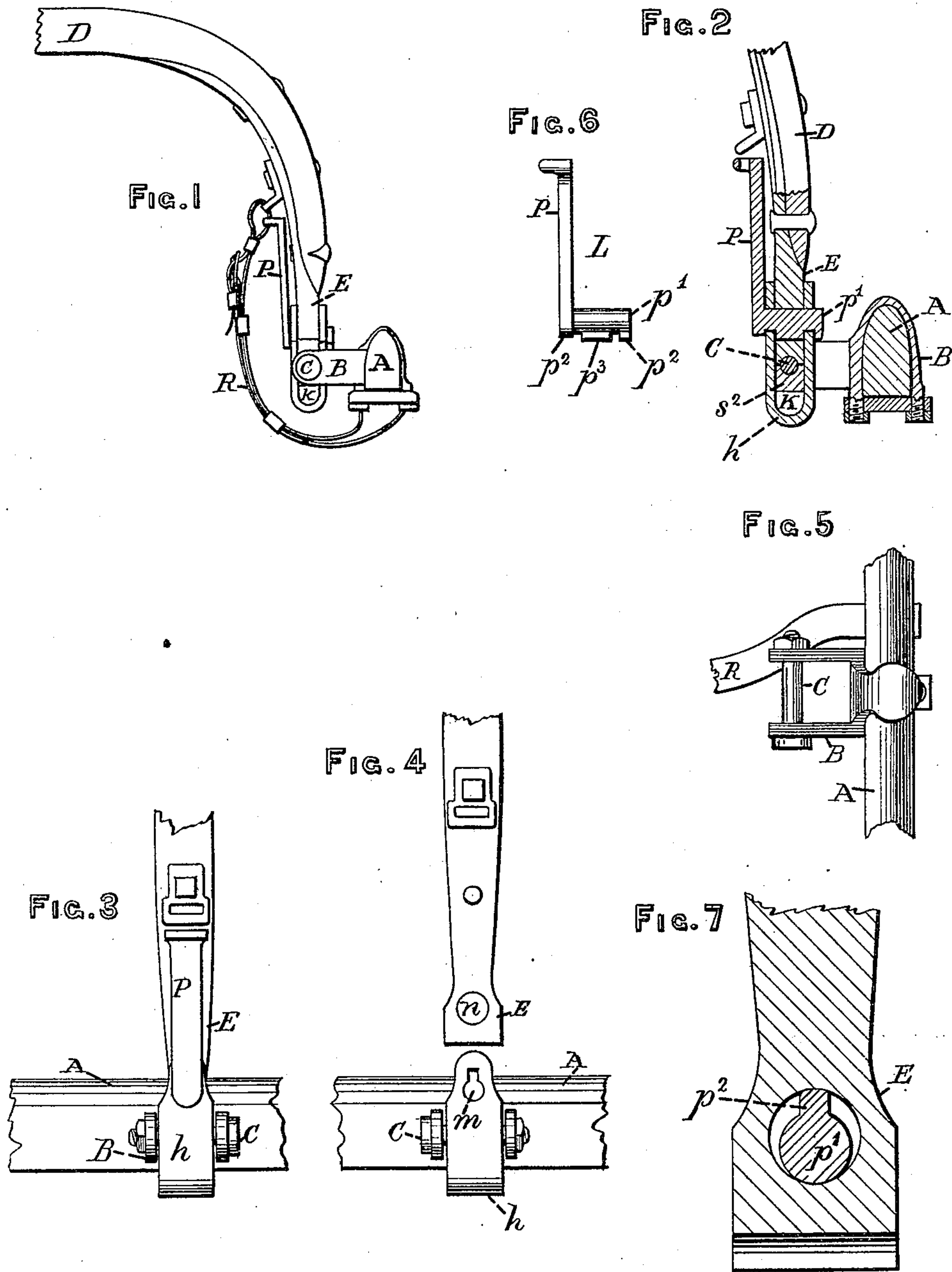


(No Model.)

J. BOZORTH.
Thill Coupling.

No. 238,561.

Patented March 8, 1881.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN BOZORTH, OF PHILADELPHIA, PENNSYLVANIA.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 238,561, dated March 8, 1881.

Application filed October 19, 1880. (No model.)

To all whom it may concern:

Be it known that I, JOHN BOZORTH, of Philadelphia, Pennsylvania, have invented a new and useful Thill-Coupling for Carriages, of which the following is a specification.

The object of my invention is to prevent the thill or shaft from rattling; and it consists in securing to the end of the shaft a stub end, on which is fitted a strap or fork, which holds the draft-bolt in close metallic contact with its bearing by means of a rubber spring compressed by an eccentric tightener.

In the drawings making part of this specification, Figure 1 is a side elevation of the shaft, coupling, and axle. Fig. 2 is a section through the same. Fig. 3 is a front view. Fig. 4 is a front view of the parts detached. Fig. 5 is a plan of the axle and fork. Fig. 6 is a side view of the tightening-key. Fig. 7 is a section through the stub, showing the stem of the eccentric in its place.

A is the axle carrying the fork B, fastened to it by bolts in the usual manner.

C is the bolt to which the shaft is hinged.

D is the thill or shaft, which is nearly horizontal when upon the horse, except that part of it nearest the carriage, which is bent almost to a quarter turn. To the under side of this bend a stub, E, is secured by bolts. A strap, *h*, is fitted upon this stub, inclosing a brass, *s*², the stub end and the brass each being bored to fit one-half of the pin C. There is inserted between the strap and the loose brass a piece of elastic gum or india-rubber, *k*, to act as a spring against the brass. Both ends of the strap are bored with holes *m* for the insertion of the eccentric. These holes have at one side a keyway suitable for the insertion of the stem *p*' of the eccentric L. This key is made with a handle, P, a cylindrical stem, *p*', of the same diameter as the hole *m*, and projections *p*² *p*³ upon the stem. The end of the stub E is drilled through at *n* with a hole corresponding in diameter to that of the lower hole, *m*, plus the keyway, so that the stem turns with an eccentric motion within the hole *m*.

To couple the shafts to the carriage, place the stub E upon the pin C, which always re-

mains in its place in the fork. Then bring up to it from the under side the strap *h*, having within it the lower brass and spring *k*. Next put the stem *p*' of the eccentric through the holes *m* and *n* and turn it half-way round. This will cause the stem to move with an eccentric motion, raising the strap, compressing the spring *k*, and bringing the stub, strap, brasses, and rubber all into close and secure contact. The check-strap R, passing through the eccentric and through an eye upon the thill, holds the handle of the eccentric in its vertical position. In this position the projection *p*² is not opposite the keyway in the strap *h*, and the eccentric is thus prevented from falling out.

By this invention I avoid the usual plan of forcing the bolt C through an elastic joint, which is a difficult operation.

In my invention the stub end is coupled around the pin while in its place. I also have the brass bearing *s*² in contact with the pin C, and keep them in contact by a rubber spring behind the brass, and avoid the wear which occurs when the rubber is in contact with the pin, as heretofore made.

I do not confine myself exclusively to the eccentric herein shown for tightening up the strap, as the ordinary connecting-rod taper key will answer without a spring. The strap may also be made solid with the stub and forked, the pressure in this case being put upon the rubber by a screw and a cross-bar below. Either of these modifications will accomplish in an inferior manner my object of tightening up a metal bearing against the pin C with a spring behind the brass.

I claim—

In a thill-coupling, the combination of the shaft D, the stub end E, secured to the shaft, and the strap *h*, carried by the shaft and holding the bolt C in metallic contact with its bearing by means of the eccentric L, as herein described.

JOHN BOZORTH.

Witnesses:

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JOHN F. GRANT.