(No Model.)

C. C. MUNROE.

THILL COUPLING.

No. 372,166. Patented Oct. 25, 1887.

Fig. 1.

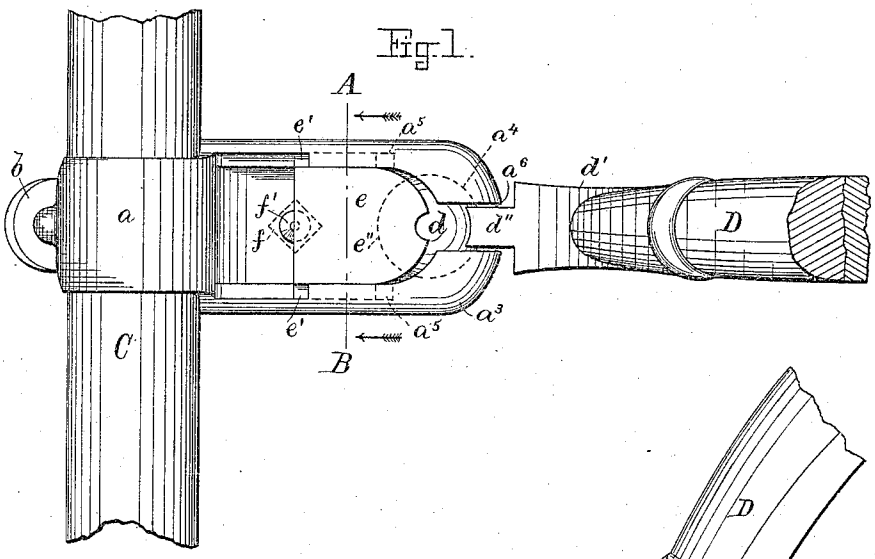


Fig. 2.

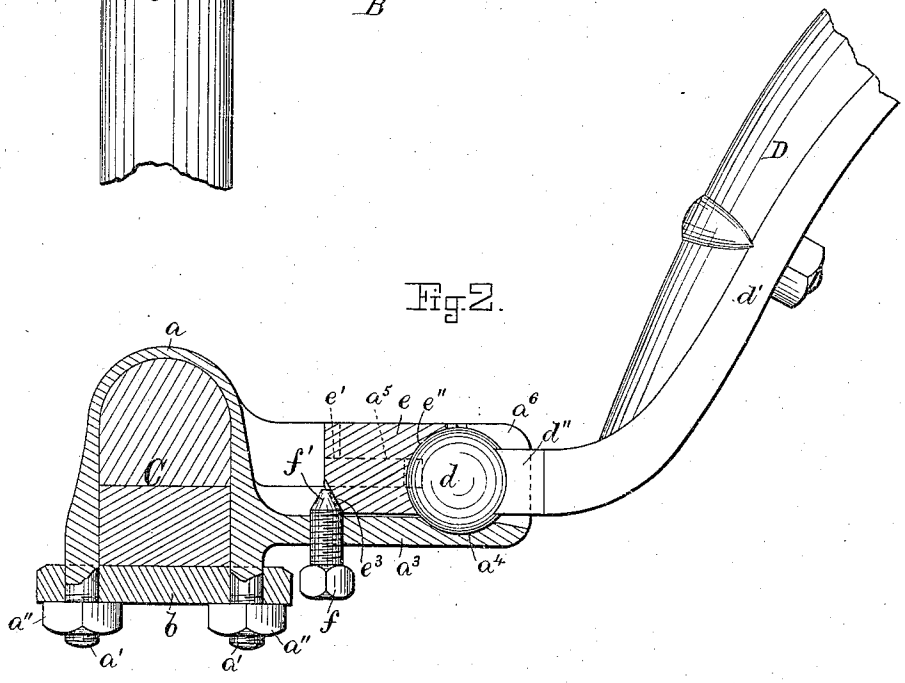
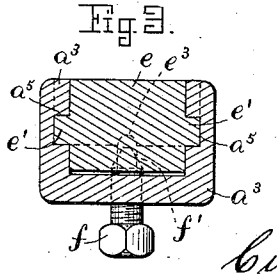


Fig. 3.



Witnesses

Henry Chadbourn.

G. H. Edmonds

Inventor

Cuthbert C. Munroe.

by Albert Andrews. his atty.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

CIRTHBERT C. MUNROE, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO CHARLES F. HASTINGS AND EUGENE M. PAINE, BOTH OF SAME PLACE.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 372,166, dated October 25, 1887.

Application filed July 6, 1887. Serial No. 243,512. (No model.)

To all whom it may concern:

Be it known that I, CIRTHBERT C. MUNROE, a citizen of Canada, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Thill-Couplings, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in thill-couplings, and it is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a plan view of the invention. Fig. 2 represents a longitudinal section of it; and Fig. 3 represents a cross section on the line A B, shown in Fig. 1.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

This device is entirely void of springs or rubber cushions liable to wear or breakage, and it is provided with an adjustable screw by means of which the wear of the parts can be taken up, so as to prevent rattling of the coupling parts, as will hereinafter be fully described.

a represents the clasp, having the downwardly-projecting screws a' a', as usual, and nuts a'' a'', by means of which and the yoke *b* the clasp is firmly secured to the carriage-axle C in the ordinary manner.

In one piece with the clasp *a* is made the forwardly-projecting bearing-block a^3, having on its interior the cup-shaped recess a^4, in which is made to rest the ball *d*, that forms the rear end of the shaft-iron d', as shown.

D is the wooden shaft, as usual, secured in a suitable manner to the shaft-iron d'.

e is a cap-piece having guide-ribs e' e' on its sides adapted to fit and slide in corresponding grooves, a^5 a^5, on the interior of the sides of the bearing-block a^3, as shown in Fig. 3. The forward end of the piece *e* is made cup-shaped, as shown at e'' in Fig. 2, so as to fit the ball *d*. The rear end of the cap *e* has an inclined plane or groove, e^3, against which is forced the upper tapering end, f', of the adjustable set-screw *f*, that is screwed from below through the bottom of the bearing-piece a^3, and said screw serves for the purpose of pressing the cap *e* against the ball *d*, and to hold it in such a position that the ball may be freely turned without rattling in the bearing. d'' is a reduced portion of the shaft-iron d' where it joins the ball *d*, and said reduced part is guided in a corresponding groove or slot, a^6, in the forward end of the bearing-piece a^3, as shown in Figs. 1 and 2, so as to allow the shaft and shaft-iron to be swung in a vertical plane, and at the same time preventing said shaft and shaft-iron from moving sidewise.

If it is desired to disconnect the ball *d* from the bearing-piece a^3, all that is necessary to do is to unscrew the set-screw *f* sufficiently to allow the cap *e* to be drawn backward and detached from the part a^3, after which the ball *d* can be detached from the bearing piece a^3, if so required for any purpose.

What I wish to secure by Letters Patent and claim is—

The herein-described thill coupling, consisting of the clasp *a* and its bearing-piece a^3, having a semi-spherical recess, a^4, in its outer end, combined with the ball *d* on the shaft-iron, the cap-piece *e*, arranged at the rear of the ball *d* and made adjustable to and from the said ball by means of the regulating-screw *f*, passing through the bottom of the bearing-piece a^3, and having conical upper end, f', adapted to bear against the rear end of the cap-piece *e*, substantially in the manner and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 1st day of July, A. D. 1887.

CIRTHBERT C. MUNROE.

Witnesses:

ALBAN ANDRÉN,

HENRY CHADBOURN.