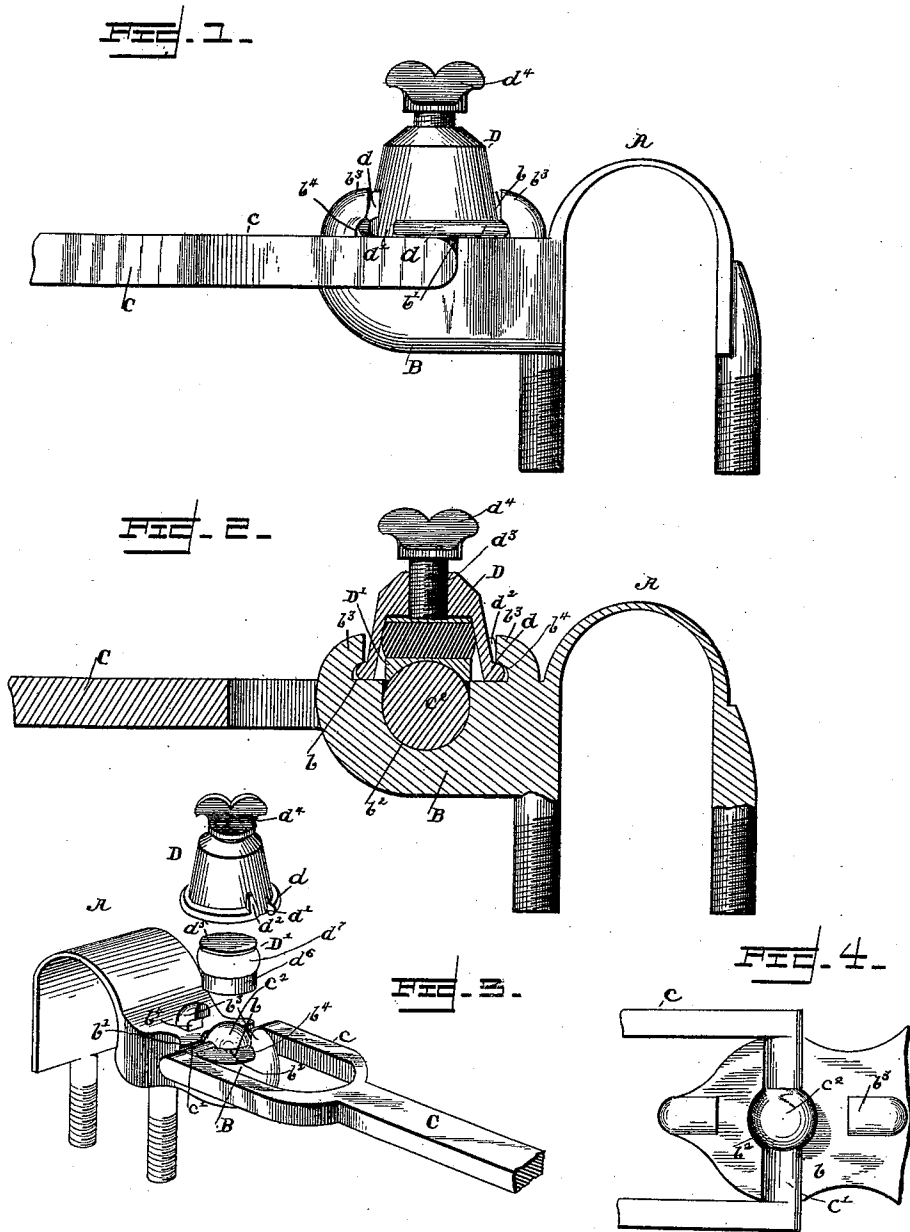


(No Model.)

G. L. & F. S. BLACKMAN.
THILL COUPLING.

No. 463,618.

Patented Nov. 24, 1891.



Witnesses

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By *their* Attorneys,

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UNITED STATES PATENT OFFICE.

GEORGE L. BLACKMAN AND FRED. S. BLACKMAN, OF ITHACA, ASSIGNORS OF ONE-THIRD TO HENRY H. COBB AND LYMAN H. COBB, OF WHITESVILLE, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 463,618, dated November 24, 1891.

Application filed April 3, 1891. Serial No. 387,538. (No model.)

To all whom it may concern:

Be it known that we, GEORGE L. BLACKMAN and FRED. S. BLACKMAN, citizens of the United States, residing at Ithaca, in the county of Tompkins and State of New York, have invented a new and useful Thill-Coupling, of which the following is a specification.

This invention is an improvement in thill-couplings.

The object of the invention is to improve the general structure of thill-couplings, particularly the structure of such as are known as "anti-rattlers."

Further objects of the invention are the simplification of thill-couplings, decrease in the cost of manufacture, effectiveness in operation, and great strength and durability.

With these objects in view the invention resides in the various novel details of construction and in the combination of parts, hereinafter fully described, and particularly pointed out in the claims.

In the drawings, in which we have illustrated our invention, and in which like letters of reference indicate corresponding parts—

Figure 1 is a side view of our improved thill-coupling. Fig. 2 is a vertical longitudinal central sectional view of the same, and Fig. 3 is a view in perspective showing the parts detached from each other in the order of their arrangement. Fig. 4 is a plan view with the thill-iron and cap removed.

In the drawings, the letter A designates the usual clip, which has extending from it a box B. This box B has a smooth level upper surface b , from which and below which is cut in the body of the box the transverse cylindrical opening b' , which has a central spherical depression b^2 . At any suitable place upon the smooth level upper surface b , but as shown in the drawings at the central portion of the box in relation to its length, are raised lugs b^3 , which have cut-away portions at the side b^4 , for a purpose to be described.

C designates the thill or shaft iron, which, for the purpose of fitting the box already described and the portions to be hereinafter described, is provided at its rear extremity with a stirrup-like enlargement c , having a cylindrical cross-piece c' , adapted to fit within the opening b' in the box, the said cylindrical

cross-piece c' being provided with a central spherical enlargement c^2 , adapted to fit the spherical depression b^2 in the box B. This spherical enlargement c^2 , while fitting within the depression b^2 , is not entirely contained thereby, but a portion of the enlargement extends above the level of the smooth upper surface b of the box B.

We come now to describe a portion of the device in which we have shown a cap portion or cover to the box as made in two parts, and this construction is what we really prefer; but we do not desire to be limited to this exact structure, as the portions marked D and D' might be made integral without departing from the spirit of the invention or materially changing the structure of the device. It is therefore to be understood that while we describe the device as we actually make it we do not wish to limit ourselves in this particular. This cap portion or cover consists of two portions—a cap or cover proper, which is indicated by the letter D, and an anti-rattler or cushion portion, designated by the letter D'. The cap portion D is substantially bell-shaped and has its lower rim flattened on the under side in order to fit upon the smooth level upper surface b of the box B. This rim, which is marked by the letter d , is provided with recesses d' at points diametrically opposite to each other, and the upper surface of the rim d , which is thus divided, slopes gradually from the right of one of said recesses to the left of the other of said recesses, where a stop d^2 is provided. The rim d , as thus divided in two sections, may be either circular or cam-faced, as shown, on the outer edge. It is generally desirable that this rim should be cam-faced. The object is that the raised lugs b^3 may be allowed to pass through the recesses d' , and the cap D, being thus brought in contact with the upper surface of the box B the cap may be turned, its rim being held within the cut-away portion b^4 of the lugs b^3 . The cap is now turned until the stops d^2 are reached. The top of the cap or cover D is provided with a threaded opening d^3 , in which the thumb-screw d^4 works. The anti-rattler or cushion portion D' is composed of an upper plate d^5 , which is flat on its upper surface, a lower portion d^6 , which has its lower

portion dished or concaved to receive and afford bearing for the portion of the enlargement c^2 , which extends above the level of the smooth upper surface b of the box B. Between the upper plate d^3 and the lower portion d^6 is interposed a cushion of rubber d^7 , which is joined to these two other pieces by heating, pressing, or the like. These three portions of the anti-rattler or cushion portion D' of the cap or cover really constitute one single and effective structure. The rubber d^7 extends a trifle beyond the outer circumferences of the upper plate d^3 and the lower portion d^6 . The object of this arrangement is that by compressing the anti-rattler D', either in the act of turning the cap portion D in position upon the box B, or by further compressing the said anti-rattler D' by means of the thumb-screw d^4 the rubber portion d^7 will be crowded outward against the inner face of the cap or cover D, thus effectually preventing any rattling and cushioning the parts. It will be evident that whether the portion D' be integral with the portion D, and therefore the thumb-screw d^4 omitted or whether the parts be separate, as described and shown, that their functions will still be the same and the effectiveness of the device will not be affected. It will be seen from the foregoing description that the device is not only exceedingly simple and practical, but that it combines beauty, novelty, and usefulness. The coupling or uncoupling is readily effected, the wear of the parts is reduced to a minimum, rattling is unknown, and by the shape of the parts the greatest strength is obtained from the least weight of material.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a thill-coupling, the combination of a box having a level upper surface, from and below which is cut in the body of the box a transverse cylindrical opening, which is provided with a central spherical depression, the

upper surface of the box being further provided with lugs having a cut-away portion, a thill-iron stirrup-shaped at its rear extremity and having its cross-piece of ball shape adapted to fit within the depression in the box, and a cap portion consisting of a bell-shaped body provided with a rim recessed to fit within the cut-away portions of the lugs upon the upper surfaces of the box; and a cushion portion having its lower end concaved to fit over the ball and provided with an intermediate rubber, all substantially as and for the purpose set forth.

2. In a thill-coupling, the combination, with a box having the lugs b^3 cut away on the side, of the anti-rattler D' and the cap or cover D, the said cap or cover having a rim d , recessed at d' and sloping or cam-shaped from one side of one recess to the opposite side of the other recess, where a stop d^2 is provided, substantially as and for the purpose set forth.

3. In a thill-coupling, the combination, with a box B, having the lugs b^3 opposite each other, of a thill-iron, an anti-rattler D', consisting of an upper plate, a lower plate concaved, and an intervening piece of rubber between them, and a cover or cap portion D, having an annular rim arranged to engage the oppositely-disposed lugs b^3 and provided with a screw-threaded opening d^3 and a thumb-screw d^4 , substantially as and for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

GEORGE L. BLACKMAN.
FRED. S. BLACKMAN.

Witnesses to the signature of George L. Blackman:

J. I. MERRILL,
CLARENCE L. SMELT.

Witnesses to the signature of Fred. S. Blackman:

J. L. CHASE,
EDW. DE WILTON.