(No Model.)

H. A. LUTTGENS.

THILL COUPLING.

No. 260,107. Patented June 27, 1882.

Fig 1

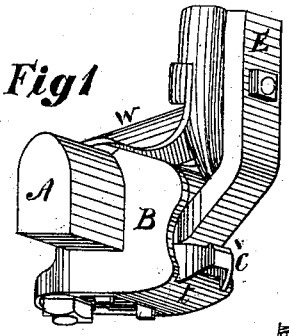


Fig 2

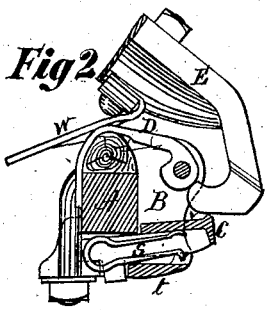


Fig. 3

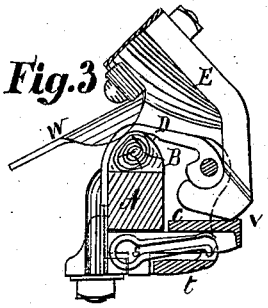


Fig 4

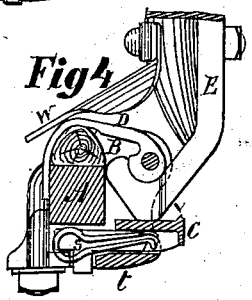


Fig 5

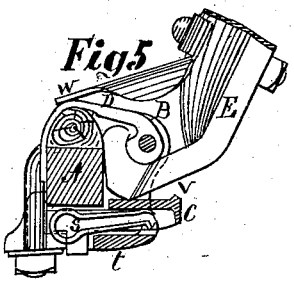


Fig 6

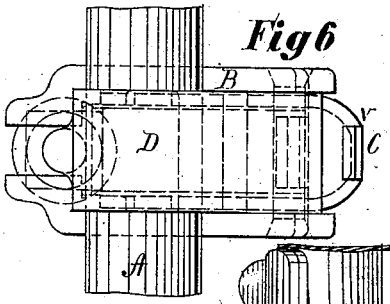


Fig 7

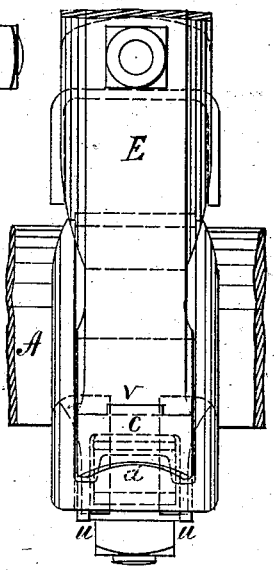


Fig 8

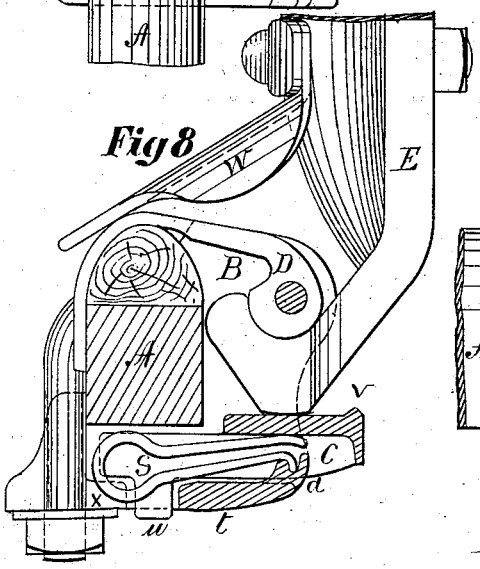


Fig 9

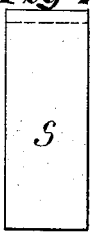


Fig 10

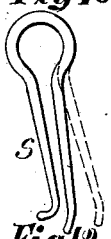


Fig 11

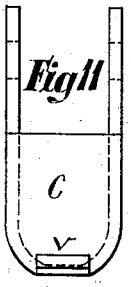


Fig 12

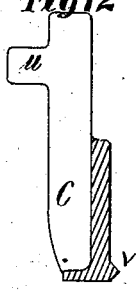
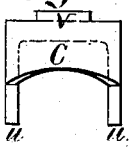


Fig 13.



Witnesses:
Mary Luttgens
J. H. C. Van der Schalk.

Inventor:
H. A. Luttgens

UNITED STATES PATENT OFFICE.

HENRY A. LUTTGENS, OF PATERSON, NEW JERSEY.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 260,107, dated June 27, 1882.

Application filed December 9, 1881. (No model.)

To all whom it may concern:

Be it known that I, HENRY AUGUSTUS LUTTGENS, of the city of Paterson, county of Passaic, and State of New Jersey, have made certain Improvements in Thill-Couplings; and I do hereby declare that the following is a correct description and specification of the same, reference being had to the accompanying drawings, in which like letters represent the same parts in all the figures.

My invention is an improvement upon a thill-coupling for which Letters Patent of the United States of America were granted to me April 13, 1875, No. 161,973.

It consists in providing a pointed projection at the end of the spring-cover, which prevents the thill-hook from sliding out of the coupling when placed in a raised position; also, in the construction and application of a steel spring so shaped and placed that the ordinary motion of a horse upon a straight road will produce a horizontal rocking movement of the spring-cover and a vertical movement of the spring, thereby causing a rolling motion at the point of contact between thill-iron and spring-cover, which latter is made so as to be adapted to its peculiar position. In other respects the coupling is similar in its parts to the one described in the original patent, though modified in shape. The axle-clip and hook-bearing are made in one piece and united with the coupling-box by a rivet. A leather dust-guard may be provided, secured to the ends of the shafts by the lower bolts uniting the shaft ends and thill-irons.

In the accompanying drawings, Figure 1 is a perspective view of the thill-coupling. Figs. 2, 3, 4, and 5 show the various positions of the thill-iron in the coupling incident to its use. Figs. 6, 7, and 8 represent the coupling in three views upon a larger scale, and Figs. 9 to 13 separate details of the same.

A represents a portion of a carriage-axle; E, the thill-iron of a carriage-shaft; B, the coupling-box, which is connected from side to side by the bottom web, *t*.

D is the hook-bearing, which is formed into an axle-clip and secured to the coupling-box by a steel pin or rivet, the whole coupling being firmly secured to the axle and united in its parts by the bolt forming part of the axle-clip.

C is the spring-cover, which has projecting sides downward and rearward, which enter the coupling below the axle A. The tenons or projections *u u* form part of this cover and hold it within the coupling-box B. A pointed projection, V, is formed at the end of the cover. Projections X on the inner sides and bottom of the coupling-box are of the same width as the projecting sides of cover C, and limit its downward movement.

The steel spring S is made of a width to enter freely into the cover C. Its lower end is bent to enter a recess which is formed into a projection, *d*, at the front of bottom web, *t*, of coupling-box B. This projection enters the bottom of cover C. The upper end of spring S supports the spring-cover C, so that as nearly as possible all the points of contact fall in a straight line from hook-bearing D to spring-bearing *d*, including thill-iron E and spring-cover C. Dust-guards W, secured to the shaft by bolts and washers, may be provided, as shown. The ends of the thill-irons for a pole are the same as when used with shafts, being bent at a short distance from the thill-coupling and shaped to be welded to the pole-irons.

The thill-iron E is preferably made of Low Moor iron, the hook end being case-hardened, the axle-clip D of Norway iron, the end forming the hook-bearing also being case-hardened. The spring-cover C may be made of cast-steel, and the coupling-box B of malleable iron or cast-steel.

Fig. 2 represents the thill-iron E at the point of entering the coupling, a slight blow being necessary to enter the same, as also when the shafts are being detached from the coupling. The steel spring S, when in the position as shown at Fig. 2, is considerably relieved of pressure; also, after the thill-irons enter the coupling, when the shafts are placed in the positions shown in Figs. 3 and 5, the shafts being raised when the thill-irons are in the position indicated by Fig. 3, or the ends of the shafts resting upon the ground when in the position indicated by Fig. 5. The spring S receives its full pressure only when the shafts are in use or the thill-iron placed as indicated in Fig. 4, when the horse is in the shafts.

The ordinary movements of a horse when walking or trotting on a straight road produce a slight movement of the thill-iron E, which,

while it causes friction between thill-hook and hook-bearing, only causes a rolling movement at the point of contact between thill-iron E and spring-cover C, on account of the peculiar relative position of the points of contact, thus causing none or little wear except when the movement becomes greater, as when the carriage is moving over short hills or through gutters.

I claim—

1. The pointed projection V at the end of spring-cover C, in combination with thill-iron E, to keep the thill-iron from sliding out of the coupling when the shafts are raised or supported in a raised position.

2. Spring S, when placed so as to induce a rocking motion of cover C, in combination with cover C and thill-iron E.

3. Cover C, formed with projections *u u*, in combination with coupling-box B.

H. A. LUTTGENS.

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