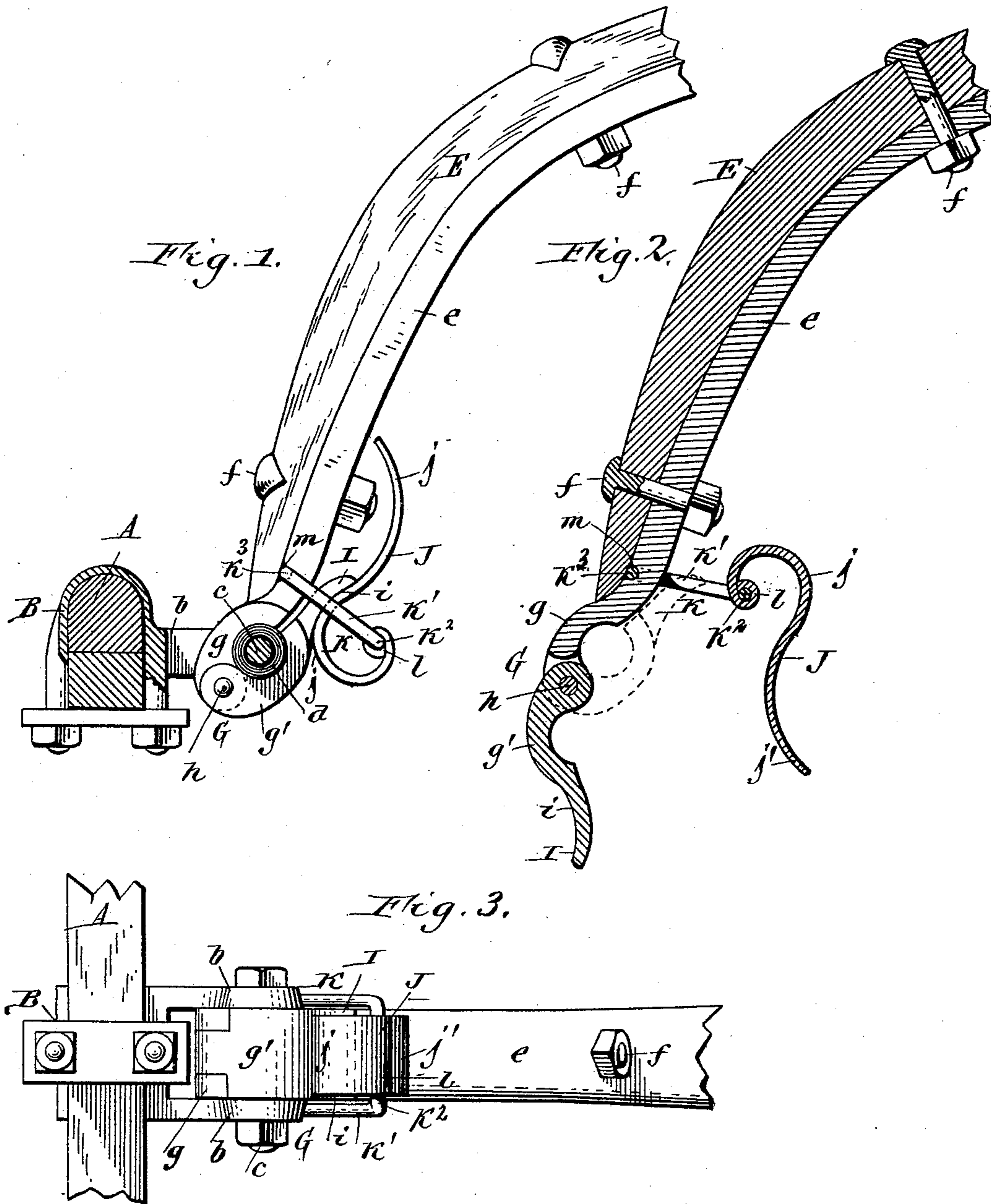


(No Model.)

T. D. LINES.  
THILL COUPLING.

No. 475,508.

Patented May 24, 1892.



Theo. L. Popp  
J. M. Grossman  
Witnesses.

Theo. D. Lines, Inventor.  
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# UNITED STATES PATENT OFFICE.

THOMAS D. LINES, OF SYRACUSE, NEW YORK, ASSIGNOR TO CHARLES A. DENISON, OF SAME PLACE.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 475,508, dated May 24, 1892.

Application filed September 26, 1891. Serial No. 406,901. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS D. LINES, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Thill-Couplings, of which the following is a specification.

This invention relates to a thill-coupling in which the draft-eye is divided and provided with a clamping device whereby the operations of attaching the thills to the vehicle or detaching the same therefrom can be quickly performed.

The object of my invention is to produce a simple coupling of this character in which the clamping device is elastic and exerts a constant pressure upon the draft-eye sections, thereby automatically taking up any wear of the parts and preventing rattling.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of my improved thill-coupling and connecting parts, showing the same in a coupled position. Fig. 2 is a longitudinal section thereof, showing the parts in an uncoupled position. Fig. 3 is a bottom plan view of the thill-coupling and connecting parts in a coupled position.

Like letters of reference refer to like parts in the several figures.

A represents the axle, and B the clip, secured to the axle and provided with two forwardly-extending ears *b b*. These ears are connected by a transverse coupling-bolt *c*, and the latter is surrounded by a bushing *d* of rubber or other elastic material.

E represents the rear end of a thill, and *e* the thill-iron, secured to the under side thereof by bolts *f*. This thill-iron is provided at its rear end with a divided draft-eye G, which embraces the elastic bushing surrounding the coupling-bolt. The divided draft-eye consists of an upper rigid section *g*, which is formed integral with the thill-iron, and a lower movable section *g'*, which is hinged with its rear end to the rear end of the fixed section by a transverse pin *h*. The front portion of the movable eye-section is provided with a lip *i*, projecting forwardly underneath the thill-iron and provided with a concave cam-seat *i* in its lower side.

J represents a spring-lever whereby the

movable section of the draft-eye is drawn toward the fixed section, and both sections are yieldingly drawn against the elastic bushing. This spring-lever consists of a plate or bar of spring-steel bent approximately into the form of an S, and having a surface *j* near its fulcrum, which surface recedes gradually from the fulcrum and operates as a cam, while its opposite end forms a handle *j'*, whereby the lever is manipulated. When the parts are in a locked position, the cam-surface *j* bears against the cam-seat on the lip of the movable eye-section, and the handle *j'* of the spring-lever extends along the under side of the thill-iron, where it is out of the way, as represented in Figs. 1 and 3.

K represents a loop or link whereby the spring-lever is pivotally supported on the thill-iron in such a manner that the lever can be disengaged from the movable draft-eye section. This loop consists of side bars *k' k'*, connected at opposite ends by cross-bars *k<sup>2</sup> k<sup>3</sup>*. The lower cross-bar *k<sup>2</sup>* of the loop is arranged in an eye *l*, formed on the cam end of the spring-lever, and forms the fulcrum thereof. The upper cross-bar *k<sup>3</sup>* of the loop rests loosely in a transverse socket *m*, formed in the upper side of the thill-iron, and is retained therein by the rear portion of the thill, which closes the upper side of the socket.

When it is desired to couple the thill to the vehicle, the spring-lever is released from the movable eye-section, and the latter is swung downwardly into the position represented in Fig. 2. The upper rigid part of the draft-eye is then placed against the upper side of the bushing of the coupling-bolt, and the lower movable part of the eye is swung forward underneath the bushing, as represented in dotted lines in Fig. 2. The spring-lever and its supporting-loop are then swung downwardly until the cam rests in the cam-seat formed on the movable eye-section, and upon subsequently turning the spring-lever upwardly the cam, in turning on the lower cross-bar of the loop as a pivot, forces the movable eye-section toward the rigid section, thereby drawing both sections of the eye firmly against the bushing, whereby the latter is compressed and rattling of the parts is prevented. The elasticity of the cam on the spring-lever per-

mits the cam to yield slightly upon coupling the parts, which causes the cam to exert a constant pressure when the parts are in a coupled position, thereby automatically taking up any  
5 wear of the parts,

I claim as my invention—

1. The combination, with the draft-eye, of an elastic lever curved about its fulcrum and gradually receding therefrom, forming an  
10 elastic cam which bears against the draft-eye, and a link which forms the fulcrum of the elastic cam-lever, substantially as set forth.

2. The combination, with the thill-iron pro-

vided with a rearwardly-projecting rigid eye-section and the movable eye-section hinged 15 thereto, of a spring-lever having near its fulcrum a cam-surface which bears against said movable section, and a link or loop connected with the thill-iron and forming the fulcrum of the spring-lever, substantially as set forth. 20

Witness my hand this 1st day of September, 1891.

THOMAS D. LINES.

Witnesses:

THEO. L. POPP,  
JENNIE CLOUGH.