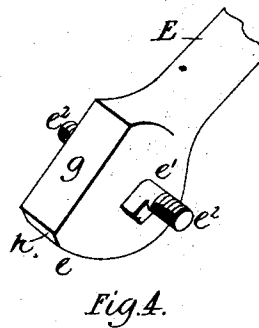
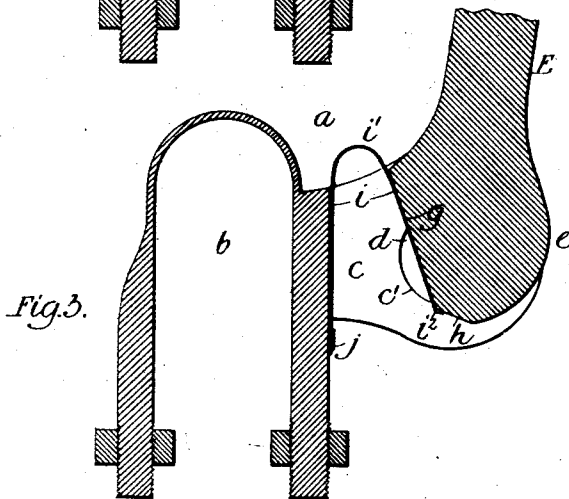
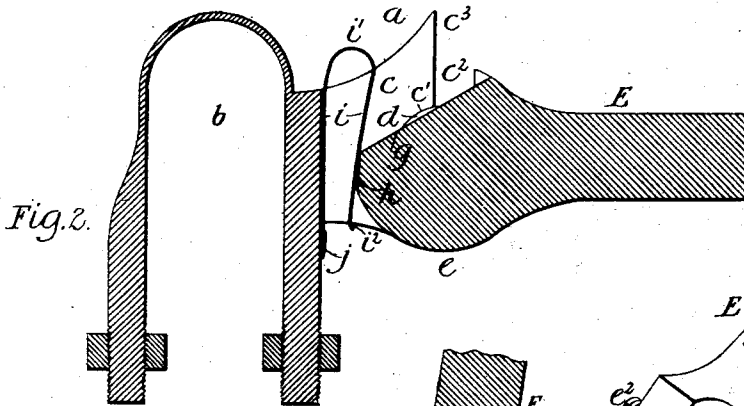
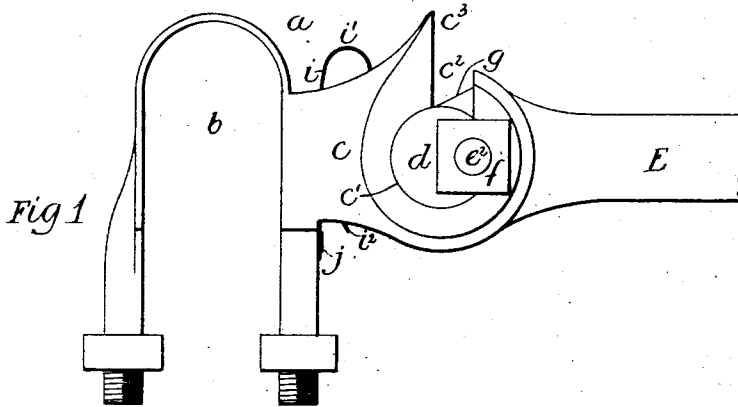


(No Model.)

J. A. KETTRING.
THILL COUPLING.

No. 525,604.

Patented Sept. 4, 1894.



Witnesses
W. J. Norton
John W. Dudley.

Inventor
John A. Kettring
By *W. J. Norton & Co.*
his Attorneys.

UNITED STATES PATENT OFFICE.

JOHN A. KETTRING, OF MARTINSVILLE, ILLINOIS.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 525,604, dated September 4, 1894.

Application filed March 3, 1894. Serial No. 502,241. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. KETTRING, a citizen of the United States, residing at Martinsville, in the county of Clark and State of Illinois, have invented certain new and useful Improvements in Thill-Couplings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to thill couplings, and especially to that class thereof wherein provision is made for instantly coupling and uncoupling the parts without the necessity of a preliminary manipulation of nuts, bolts, or the like; and has for its object to improve the general construction and operation of such devices.

The invention consists in the construction, relative arrangement and operation of the parts composing the improved thill coupling, all of which will fully and clearly appear from a reading of the subjoined description taken in connection with the accompanying drawings which form a part of this specification and in which—

Figure 1 is a side elevation of the improved thill coupling. Fig. 2 is a vertical central section; and Fig. 3 is a similar view with the parts in a different position. Figs. 4 and 5 are detail views.

Referring to the drawings by letter, *a* denotes the coupler, and formed integrally therewith is the clip *b* which is secured to the axle tree in the usual manner. The coupling consists of two ears *c c* which are parallel to each other and extend outwardly from the clip, and which have near their outer ends circular openings *c' c'*, and slots *c² c²* which communicate with the said openings. The inner walls of the slots are elongated by forming projections *c³* on the upper sides of the ears for a purpose to be hereinafter explained.

d d are bushings which are circular in shape and conform to the openings *c'* in which they are fitted, a sufficient freedom of movement being allowed to permit of said bushings being turned, and *d' d'* are recesses in said bushings which conform at their upper ends to the

slots *c²* but which gradually diminish in width to the base, or in other words are slightly wedge-shaped.

The thill end or tongue *E* is provided with a head *e* which is of sufficient width to fit the opening between the ears, and *e' e'* are wedge-shaped bolt pivots which conform to the slots *c²*. The outer ends *e² e²* of these pivots are reduced and screw-threaded to receive nuts *f* which in practice abut against the bushings and ears as will be presently explained. The head *e* is made substantially cylindrical, but segments are cut away to form two faces, one of which, *g*, is so arranged as to incline rearwardly from the perpendicular when the thills are in a raised position; and the other, *h*, is so arranged as to be in a substantially perpendicular position when the shafts are lowered and in use.

i is a spring which is secured at its lower end to the clip by a screw *j*, and this spring is provided with a return bend *i'*, the lower free end *i²* of which is curved slightly forward.

In the operation of my invention the thill is coupled by moving the pivots through the slots into the recesses in the bushings where they fit snugly, and the pivots conforming to the dimensions of the recesses the thills may be moved at will past the slots, the bushings following said movements. To facilitate the entrance of the pivots, the inner wall as before stated is made higher than the outer wall in order that the pivots may be centered will be understood. The nuts on the ends of the pivots act as shoulders or stops to prevent the spreading of the ears when strain is brought to bear, and also to prevent the disengagement of the bushings; or if desired any suitable means may be employed to secure said bushings laterally and yet permit of their rotation. The spring employed performs three functions, the first being to prevent the head from passing the slot when the coupling is being made; the second being to prevent the rattling of the parts when the device is in use, inasmuch as the spring, when the thill is lowered, bears against the face *h*, and by pressure thereon acts as an antirattler; and the third being to partly disconnect the parts by bearing on the face *g* when the thill is raised. In the latter case the face *g* assumes an inclined position and the spring which has a

tendency to move outward bears with pressure against the said face and in conjunction with the curved lower end ² which abuts against the point formed by the juncture of the two faces, operates to raise and partly disconnect the thill when the pivots are moved in line with the slots. When the thill is coupled and in use the spring is compressed, and bearing against the head forces the bearings forward with sufficient pressure to insure a noiseless movement of the parts, but when the parts are at rest, *i. e.*, the thills are raised, the spring is relieved, and consequently its period of usefulness is prolonged.

15 The parts are few in number, and simply constructed and the device as a whole is effective and durable.

It is evident that if desired the thills may remain coupled whether the vehicle is at rest or in use, inasmuch as the spring will operate to maintain the raised position of the thills without the necessity of employing any auxiliary devices.

What I claim as my invention is—

25 1. In a thill coupling the combination with the clip and its attached ears, said ears having circular openings and communicating slots, of the thill iron having laterally projecting pivots at its rear end, said pivots being threaded at their outer ends, the bushings into which said pivots fit and the nuts

screwed upon the threaded ends of the pivots substantially as shown and described.

2. A thill coupling comprising two ears having the circular openings and the slots leading thereto, the rear walls of said slots being higher than the front walls, the bushings fitting said openings and having the recesses adapted to register with the slots when the bushings are turned as described, the thill head having the faces and the bolt pivots, said pivots being provided with reduced screw threaded ends and nuts, and the spring having the return bend and the curved free end and operating in conjunction with said faces in the manner and for the purposes set forth.

3. In a thill coupling the combination with the clip and its ears, having openings and slots as described, of the bushings located in the openings and slotted also, the thill iron having the laterally projecting pivots threaded at their outer ends, the nuts adapted to be screwed upon said ends and a spring connected to the clip and adapted to bear upon the rear end of the thill iron substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. KETTRING.

Witnesses:

C. H. FOSIE,

CHARLES T. ISHLER.