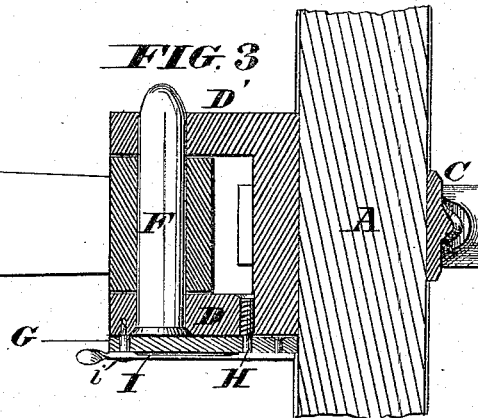
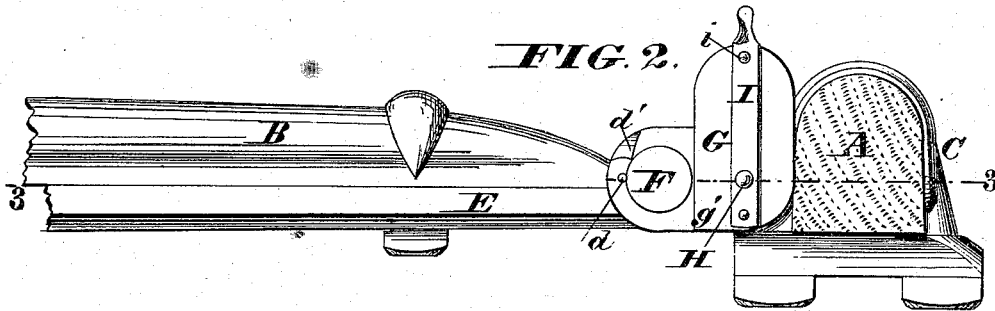
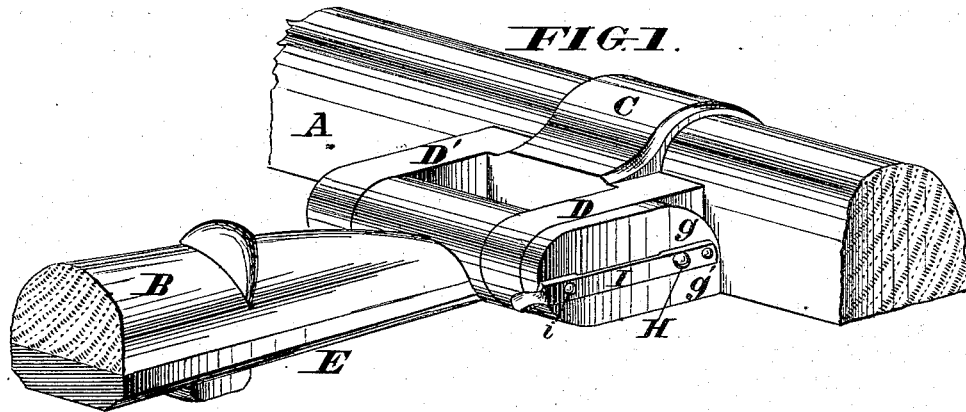


S. M. STRADER.  
Thill-Coupling.

No. 160,728.

Patented March 9, 1875.



WITNESSES  
*Jas. L. Swin*  
*Henry Tanner.*

INVENTOR  
*Samuel M. Strader.*  
By *Knights* Attorneys

# UNITED STATES PATENT OFFICE.

SAMUEL M. STRADER, OF MADISON, INDIANA.

## IMPROVEMENT IN THILL-COUPLINGS.

Specification forming part of Letters Patent No. 160,728, dated March 9, 1875; application filed January 16, 1875.

*To all whom it may concern:*

Be it known that I, SAMUEL M. STRADER, of Madison, in the county of Jefferson and State of Indiana, have invented a new and useful Improvement in Thill-Couplings, of which the following is a specification:

My invention consists in fastening the thill-iron to the lugs of an axle-clip of ordinary construction by means of a bolt, which is secured in place by a plate pivoted to the axle-clip and closing over the end of the bolt. The pivoted plate is held in the position in which it locks the bolt by means of a spring-catch, and for additional security one end or corner of the said plate is formed with an eccentricity or prominence, which binds against the front of the axle when the plate is elevated to release the bolt, so as to prevent the said plate working into its elevated position spontaneously, even when not held by the spring-catch.

In the accompanying drawings, Figure 1 is a perspective view of the connected parts of an axle and shaft with the attaching-clip and my improved device for securing the thill-iron to the clip. Fig. 2 is a side elevation, showing the hinged plate in its elevated position to permit the withdrawal of the bolt.

Fig. 3 is a horizontal section on the line 33, Fig. 2, but showing the hinged plate in its lower or normal position, so as to secure the bolt.

A and B represent, respectively, parts of an axle and shaft or thill of ordinary construction. C is the axle-clip, to the lugs D D' of which the thill-iron E is fastened by a bolt, F. The bolt F is of conical or slightly-tapering form at its point to enable it to pass into the eye of the thill-iron more readily, especially when the ordinary gum anti-rattler is used in connection with my invention. The head of the bolt F is countersunk in the lug D, so as to have their upper surfaces flush. G represents a plate, pivoted by bolt, screw, or rivet H to the lug D, and adapted to shut down in the position shown in Fig. 1, so as to cover the head of the bolt and effectually prevent its escape. The pivoted plate G extends to a sufficient distance in rear of its hinge H to give it the necessary rigidity and strength in

its bearing against the head of the bolt. The corner or portion *g*, which, in the act of elevating the hinged plate G, works in contact with the face of the axle A, is made with a slight eccentricity or prominence, causing it to bind against the said axle with sufficient force to prevent the possibility of the plate working into its highest position spontaneously, or moving inward to a sufficient distance to release the bolt F. I represents a spring-catch, which may be fastened to the plate G by the same bolt or pin H, which hinges the plate G to the lug D. The catch I is provided with a pin, *i*, adapted to engage in a hole, *d*, prepared for it in the lug D, an oblique notch, *d'*, in the said lug D, above the hole *d*, serving to press the pin and spring-catch back as the plate G is pressed down to its lowest position, when the pin springs into the catch or hole *d*, and securely locks the said plate until it is released by the intentional retraction of the spring-catch.

My invention constitutes a simple and effective substitute for the bolt and nut or other coupling device commonly in use for this purpose, enabling the change from shafts to pole, or vice versa, to be made with great facility. The coupling is also very secure in use. It is almost impossible for the bolt to escape by accident, for the reason that the square corner *g'* of the plate G, resting against the axle, will effectually prevent the plate dropping below its proper position even without the protection of the spring-catch I. The said plate is prevented from working up to a sufficient extent to release the bolt, for the reason that it cannot rise more than forty-five degrees without binding against the face of the axle.

The handle of the spring I may be made of sufficient size and of any convenient shape to adapt it for easy use.

The pivot H, by which the plate G is attached, may be riveted over the spring I, as shown, or it may be constructed as a screw, so that the side plate can be taken off and put on at pleasure.

I am aware that thill-couplings have before been made with sliding bolts fastened or locked by hinged plates.

The following is claimed as new:

1. In combination with a sliding bolt for fastening the thill-iron to the axle-clip, the pivoted plate G, having prominent portion *g* for binding against the face of the axle, so as to prevent the complete elevation of the plate by accident, substantially as set forth.

2. The combination of the spring-catch I with the pivoted plate G and bolt F, substantially as and for the purposes set forth.

SAMUEL M. STRADER.

Witnesses:

R. P. GAHR,  
ROBERT CRAVENS.