

**No. 610,865.**

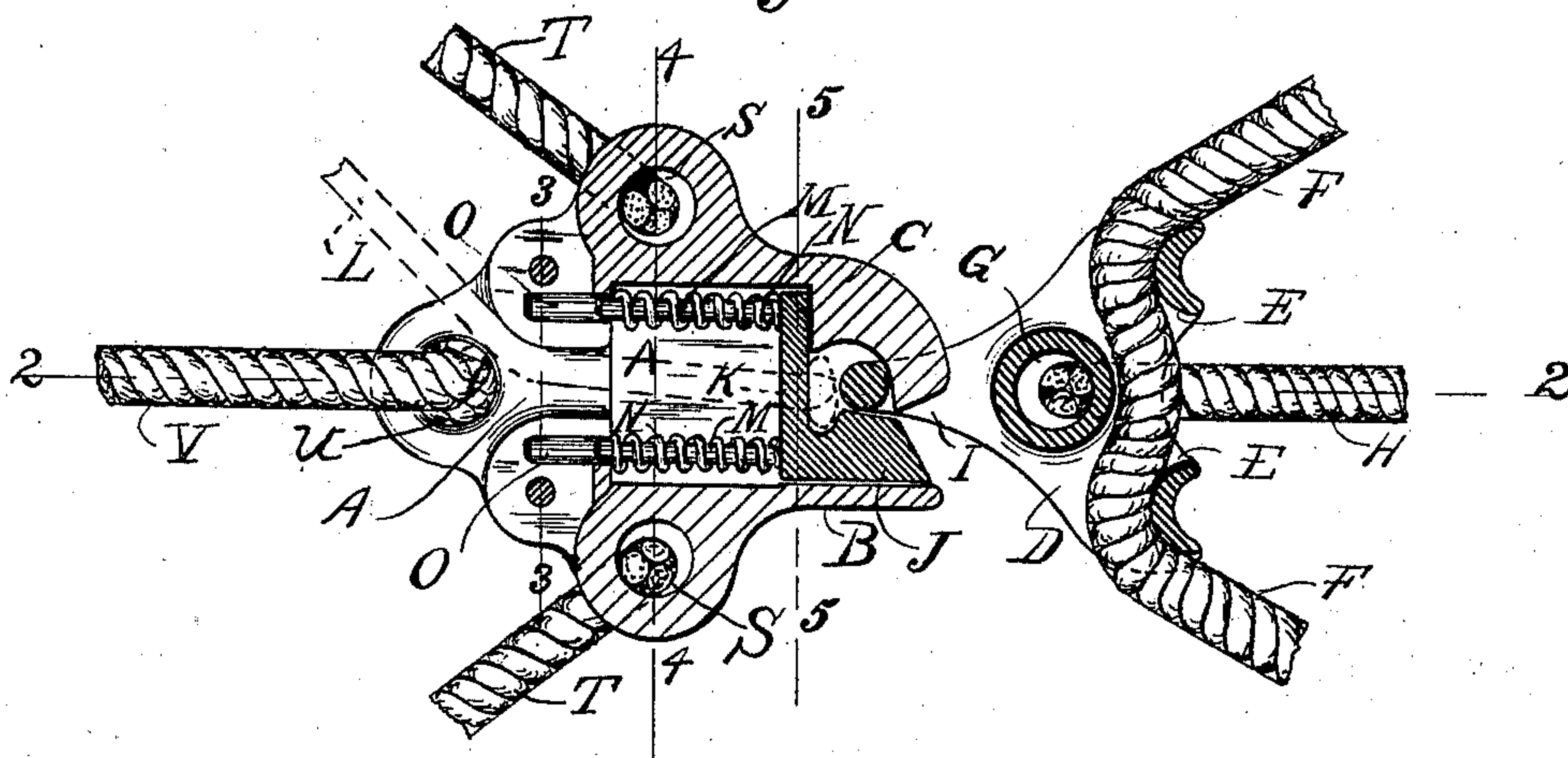
**Patented Sept. 13, 1898.**

**W. LOUDEN.**  
**TRIP COUPLING.**

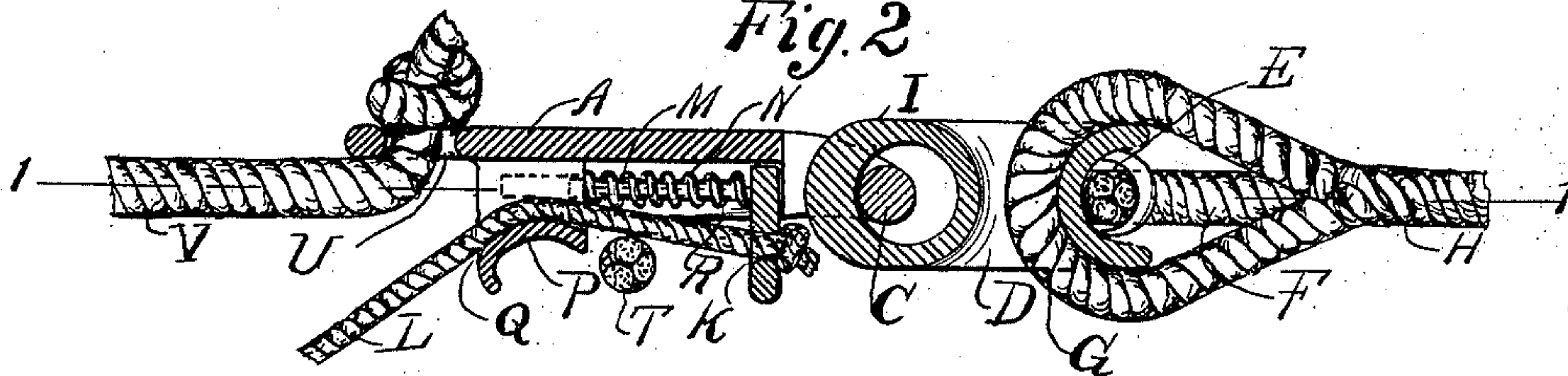
(Application filed Jan. 31, 1898.)

(No Model.)

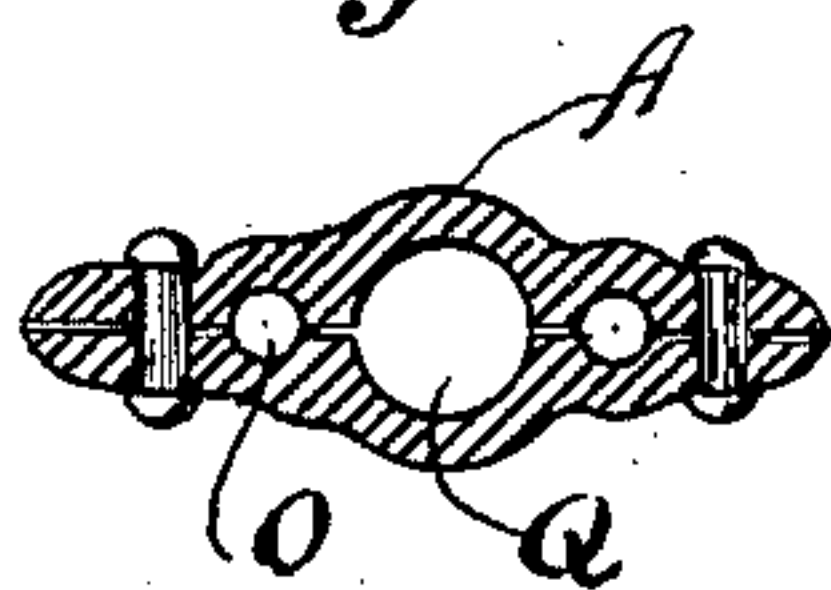
*Fig. 1.*



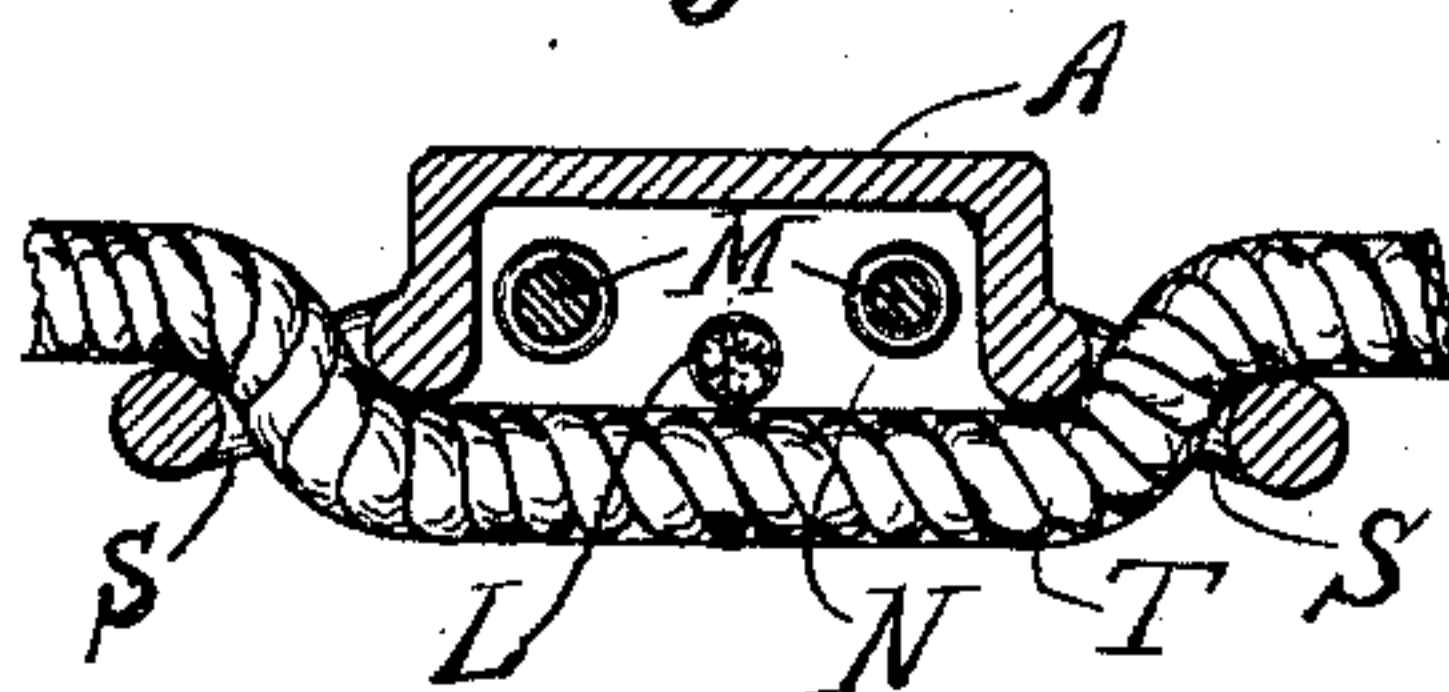
*Fig. 2*



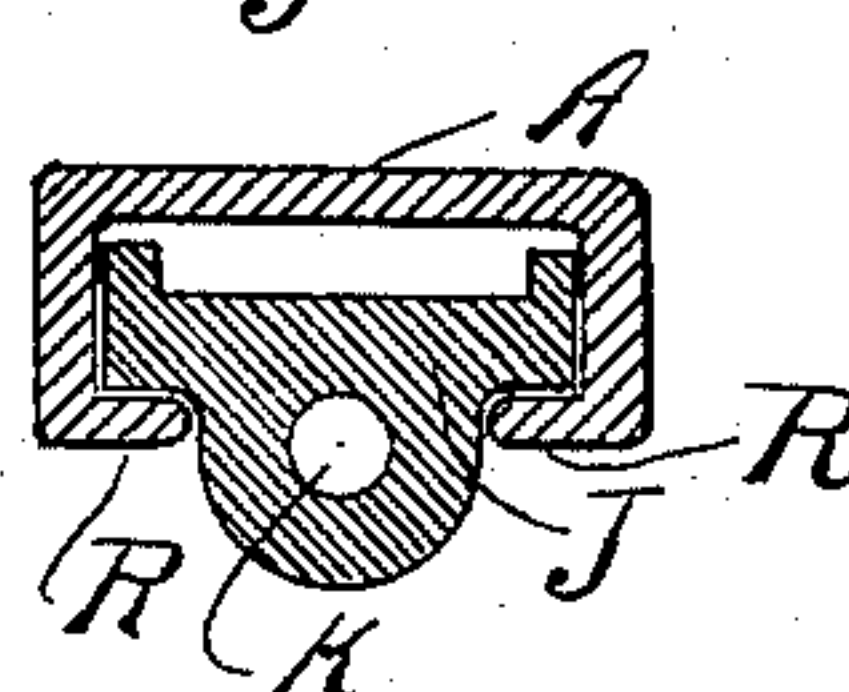
*Fig. 3*



*Fig. 4*



*Fig. 5.*



Witnesses:

A. D. Long,  
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William London.



# UNITED STATES PATENT OFFICE.

WILLIAM LOUDEN, OF FAIRFIELD, IOWA.

## TRIP-COUPLING.

SPECIFICATION forming part of Letters Patent No. 610,865, dated September 13, 1898.

Application filed January 31, 1898. Serial No. 668,541. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM LOUDEN, a citizen of the United States, residing at Fairfield, in the county of Jefferson and State of Iowa, have invented a new and useful Improvement in Trip-Couplings, of which the following is a specification.

My invention relates to trip-couplings for use in hay-slings and kindred devices; and it consists of the features herein described, and particularly set forth in the claims.

In the accompanying drawings, Figure 1 is a horizontal section on the line 1 1 of Fig. 2, the view being from the under side. Fig. 2 is a vertical section drawn on the longitudinal center of the coupling as indicated by line 2 2 of Fig. 1. Figs. 3, 4, and 5 are vertical cross-sections of a complete coupling, drawn at the points indicated by lines 3, 4, and 5, respectively, in Fig. 1.

A represents the main casting of the coupling, one end of which is made forked and the other is fitted with an eye, while its body has a cavity for the incasement of the trip mechanism. One of the prongs B is made substantially straight, and the other is bent toward it, so as to form a hook or lug C.

D is a trip-plate having two eyes E for the attachment of a rope F and a central eye G for the attachment of a rope H. The opposite end of the trip-plate D has a loop I, which is adapted to catch over the hook C.

J is a slidable trip-bolt fitted in the cavity in the body of the casting A and is adapted to close the opening between the prong B and the hook C and hold the loop I in engagement with the hook. The rear end of the trip-bolt J is fitted with fingers M, around which coiled springs N are placed. The ends of the fingers M are adapted to enter and slide in openings O, which are formed by semicircular cavities in the casting A and in the guide-plate P, riveted thereto.

The coiled springs N, resting against the edges surrounding the openings O, will press the trip-bolt J outwardly into the opening between the prong B and hook C, and will thus prevent the detachment of the loop I from the hook C. In the central part of the bolt J is an eye K, into which a cord L is secured, and the free end of the cord is passed

over the rounded edges Q of the guide-plate P. A pull on the cord L will overcome the resistance of the springs N and withdraw the trip-bolt J from the opening between the prong B and hook C, and thus permit the release of the loop I.

To lock the coupling, press the end of the loop I against the bolt J until it is pushed back horizontally far enough to let the loop catch over the hook C, when, if the cord L is free, the springs N will push the trip-bolt J out horizontally into its normal position and close the opening between the prong B and hook C. The ends of the hook C and bolt J are beveled to facilitate this operation.

To more securely hold the trip-bolt J in position inwardly-extending lips R are formed on the lower edges of the main casting A near the central or forward part of the bolt J, or in place of two lips R, as shown in drawings, one on the lower edge of the prong B will suffice, so as to hold the head of the bolt J in place and let it slide freely in and out. It is also preferable to have two fingers M, each encircled with coiled springs N, so that if one should fail the other will remain; but, if desired, one finger only may be used and any other suitable kind of spring may be substituted.

Eyes S are formed on the sides of the main casting A for the attachment of a rope T. These eyes are set below the center of the casting A, so the rope T may be passed down through them and under the coupling between them, and the ends of the rope will draw in line with the horizontal center of the coupling. An eye U is also formed on the rear end of the main casting A and is set so that the rope V may be passed into it from the under side and knotted above and will draw on the line of the horizontal and longitudinal centers of the coupling. By setting the eye U above the center instead of below ample room is provided for the passage of the trip-cord L.

The end of the trip-plate D stands in a vertical position and at right angles to the hook C, with which it connects. The other end of the trip-plate is disposed horizontally and contains the eyes E, through which the rope F is horizontally passed. The eye G is dis-



posed vertically and the rope H is looped through it. This arrangement secures a complete center draft of the ropes on the trip-plate D.

5 It will be further observed that all the ropes will draw in line with the horizontal center of the coupling, and the connecting-loop I and hook C being free to accommodate themselves to any lateral strain the coupling will  
10 not be liable to become cramped in operation. This construction also permits the trip-plate to be made very light and yet have great strength.

The eye G is set so one edge of the wall  
15 surrounding it will bear against the rope F between the eyes E and will thus prevent it from slipping. It is preferable to have the ropes F and T in one piece each and to have them passed through from one side to the  
20 other of the coupling; but each rope may be of two pieces, and each piece passed into its respective eyes, as shown, and then be knotted or otherwise secured, so it will draw true on the horizontal line of the coupling, as before stated.

If only two ropes at each end are required, the center ropes may be dispensed with, or, if only one rope at each end should be needed, the side ropes may be taken off and the center ropes left on, and under all these conditions the draft will always remain true on the longitudinal centers of the coupling, both horizontally and vertically. If desired, a portion of the prong B may be cut off so the trip-  
30 bolt J will project out beyond it; but in this case the bolt J would be more exposed and would have to be made stronger to stand the strain of the loop I upon it.

By making the guide-plate P separate and  
40 afterward securing it to the main casting A it can be more easily made smooth for the passage of the trip-cord, and the trip-bolt J can be first placed in position behind the lips R, and the plate then be secured to the main  
45 casting, so as to permanently hold the bolt J in place.

What I claim is—

1. A trip-coupling having a retaining hook or lug formed on one end of its main part,  
50 and pointing horizontally toward one side of the coupling, a trip-plate having a loop set at right angles to the hook and adapted to catch over it, and a horizontally-slidable trip-bolt adapted to close the open end of the hook  
55 and hold the loop within it, substantially as described.

2. A trip-coupling having one end of its main part forked, one of the forked ends being bent toward the other so as to form a hook  
60 or lug, a trip-plate having a loop adapted to pass in between the forked ends and catch over the hook, and a trip-bolt adapted to slide horizontally between the forks and close the opening between them, substantially as and  
65 for the purpose set forth.

3. A trip-coupling having one end of its main part forked, one of the forked ends be-

ing bent toward the other so as to form a hook or lug, a trip-plate having a loop adapted to pass in between the forked ends and catch  
70 over the hook, and a spring-pressed bolt adapted to slide horizontally between the forks and close the opening between them, substantially as and for the purpose set forth.

4. In a trip-coupling, the combination with  
75 a trip-plate of a main casting having a horizontal cavity in its body and means for connecting said trip-plate, a trip-bolt adapted to slide in said cavity and hold the trip-plate in position, and a separate guide-plate secured  
80 to the rear end of said casting and adapted to support a trip-cord, substantially as described.

5. In a trip-coupling, the combination with  
85 a trip-plate of a main casting having a horizontal cavity in its body and means for connecting said trip-plate, a trip-bolt adapted to slide in said cavity and hold the trip-plate in position, and a separate guide-plate secured  
90 to the rear end of said casting and adapted to support a trip-cord, and also the rear end of the trip-bolt, substantially as set forth.

6. In a trip-coupling, the combination with  
95 a trip-plate of a main casting having a horizontal cavity in its body, with a lip or lips on the edges thereof, and means for connecting said trip-plate, a trip-bolt adapted to slide in said cavity and rest on said lips and hold the trip-plate in position, and a separate guide-  
100 plate secured to the rear end of said casting and supporting the rear end of said trip-bolt, substantially as set forth.

7. In a trip-coupling, the combination with  
105 a trip-plate, of a main casting having a cavity in its body, trip mechanism in said cavity, means at one end for connecting said trip-plate, and an eye on each side for the attachment of a rope, said eyes being set below the horizontal center of the casting and permit-  
110 ting the rope to pass below the casting, and to draw on the horizontal center of the coupling, substantially as described.

8. In a trip-coupling, the combination with  
115 a trip-plate of a main casting having a cavity in its body, trip mechanism in said cavity, means at one end for connecting said trip-plate, and an eye on each side and on the other end for attachment of ropes, said side  
120 eyes being set below and the end eye above the horizontal center of the castings and permitting each and all of the ropes to draw on the horizontal center of the coupling, substantially as set forth.

9. In a trip-coupling, the combination with  
125 the main part of the coupling of a trip-plate adapted to connect at one end with said main part, and at the other end horizontally-disposed eyes for the passage of a rope there-through, substantially as described.

10. In a trip-coupling, the combination  
130 with the main part of the coupling of a trip-plate adapted to connect at one end with said main part, and at the other end, one vertical and two horizontal eyes for the passage of



ropes therethrough, and permitting each and all the ropes to draw on the horizontal center of the coupling, substantially as set forth.

5 11. In a trip-coupling, the combination with the main part of the coupling of a trip-plate having a vertically-disposed end connecting with said main part, and a horizontally-disposed end for the attachment of a rope, substantially as described.

10 12. In a trip-coupling, the combination with the main part of the coupling of a trip-plate having a vertically-disposed end con-

necting with said main part, and a horizontally-disposed end for the attachment of ropes, said end having two horizontal eyes 15 and a vertical eye between them, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM LOUDEN.

Witnesses:

AGNES M. LOUDEN,  
FRANK M. DROZ.