

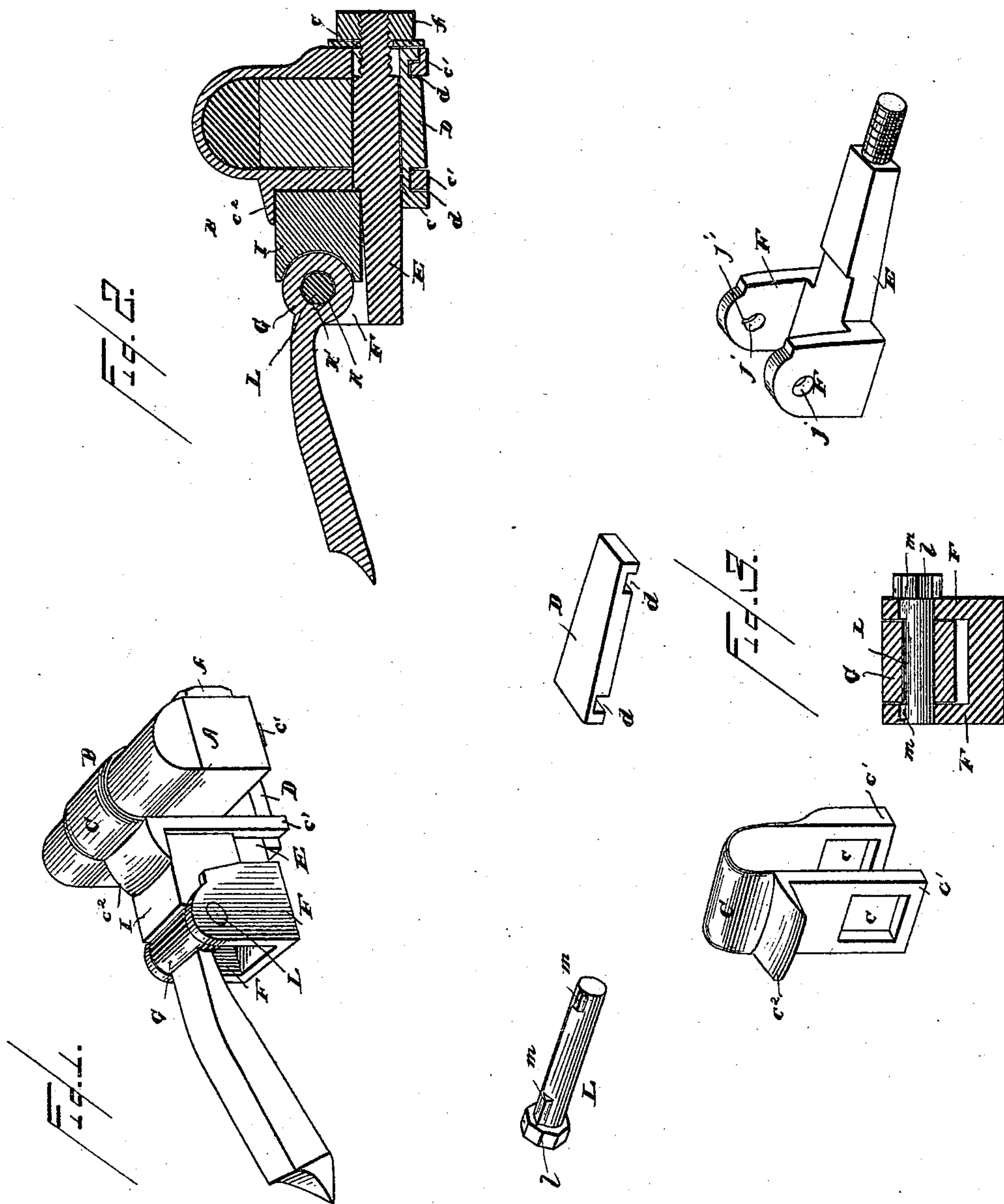
(No Model.)

J. M. SPENCER & G. W. BEEBE.

THILL COUPLING.

No. 355,795.

Patented Jan. 11, 1887.



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# UNITED STATES PATENT OFFICE.

JOHN M. SPENCER AND GEORGE W. BEEBE, OF LAWRENCE, KANSAS, ASSIGNORS OF ONE-THIRD TO THOMAS CHAPMAN, OF SAME PLACE.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 355,795, dated January 11, 1887.

Application filed October 9, 1886. Serial No. 215,798. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN M. SPENCER and GEORGE W. BEEBE, citizens of the United States, residing at Lawrence, in the county of Douglas and State of Kansas, have invented a new and useful Improvement in Thill-Couplings, of which the following is a specification.

Our invention relates to improvements in thill-couplings; and it consists of the peculiar combination and novel construction and arrangement of the various parts for service, substantially as hereinafter fully described, and particularly pointed out in the claim.

The object of our invention is to provide an improved thill-coupling which shall effectually prevent the thill-iron from rattling and which can be manufactured at about the cost of the ordinary thill-coupling, but at the same time the device is stronger and more durable in construction, can be adjusted or tightened with greater facility, is not liable to get out of order, and can be operated more quickly to effect the change from thills to draft-poles, as is sometimes desirable.

In the accompanying drawings, which illustrate a thill-coupling embodying our improvements, Figure 1 is a perspective view. Fig. 2 is a vertical central sectional view of the same, and Fig. 3 is a detached perspective view of the parts of the coupling.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the axle of a vehicle to which my improved thill-coupling B is applied or connected. This coupling is provided with the clip C, which straddles and embraces the axle, and the lower ends of the terminal arms of the clip are provided with slots or openings *c*, through which are passed the clip-plate D and the draw-bolt E of the draw-irons F. These terminal arms *c'* of the clip are made of spring metal or tempered so that they will have a slightly spring or yielding action, and the front arm of the clip is provided near its upper end and on the outer exposed side thereof with an integral transverse lip or flange, *c''*, for a purpose presently described.

The clip-plate D of the coupling is made flat in form, and provided on the lower side and near its ends with transverse notches or

recesses *d*, into which fit or take the lower edge of the openings or slots in the arms of the clip, as shown. The clip-plate is provided with the inclined sides, which converge toward each other at one end, and thereby cause the said plate to resemble a wedge, and the reduced end of the clip-plate passes through the smaller opening that is formed in one of the arms of the clip, the openings in the clip-plate being made of different sizes to adapt the larger and smaller ends of the clip-plate to be passed therethrough. When the clip-plate is passed through the openings in the arms of the clip, the said arms are compressed slightly or drawn together, and thereby more firmly held upon the sides of the axle, and the clip-plate is then forced or pressed downwardly, so that the lower terminal ends of the slots or openings in the arms of the clip are caused to enter the notches or recesses in the clip-plate. By this means the clip is more expeditiously fastened upon the axle than the old form of device in which it is necessary to adjust two nuts upon the threaded ends of the arms, and by making the arms of the clip so that they will yield and connecting them by a plate the arms are more firmly and securely held in engagement with the axle.

A space is left or provided between the upper side of the clip-plate and the lower under side of the axle, and in this space is fitted the draw-bolt E of the device. The sides of this draw-bolt are inclined and converged toward each other to make the bolt wedge-shaped, and the reduced end of the said bolt passes through the smaller opening in the rear arm of the clip-plate. The reduced end of the draw-bolt is externally threaded, as shown, and it projects in rear of the rear arm of the clip, and a nut or burr, *f*, is screwed or fitted on the threaded extremity of the bolt, and bears or impinges against the rear side of the clip, as shown.

The front end of the draw-bolt is extended beyond the front vertical face of the axle for a suitable distance, and the vertically-disposed draw-irons F are cast or formed integral with the said front end of the draw-bolt. These draw-irons are arranged parallel with each other and a short distance apart, to adapt the thill-iron G to be fitted therein, and in rear of this



thill-iron and in front of the axle is fitted a cushion, I, which is preferably of rubber or other suitable yielding material. The draw-irons are provided with transverse openings 5 which are arranged in line with each other, the openings being lettered *j*. The upper side or periphery of the openings are provided with notches or recesses *j'*, which coincide with one another, and the thill-iron is also provided 10 with an eye, *k*, which has a recess or notch, *k'*, therein, the eye and notch of the thill-iron being adapted to align with the openings and notches in the draw-irons, to permit a pivot-pin or shaft, L, to be passed therethrough to 15 pivotally connect the draw and thill irons together. This pin or shaft is provided at one end with a head, *l*, and it is further provided with projecting shoulders or nibs *m*, one of which is arranged near the head and the other 20 near the free end of the pin or shaft, and the part or section of the pin between the shoulders or nibs is made cylindrical in form.

To fit the shaft or pin in the draw and thill irons, the latter is turned to nearly a vertical position to adapt its eye and notch to register 25 with the openings and notches in the draw-irons, when the pin is passed through the aligned openings and eye, while the nibs or shoulders thereof fit in the notches in the parallel draw-irons, after which the thill-iron is 30 lowered to its normal approximately-horizontal position to throw or adjust its recess or notch out of line with the notches of the draw-irons. By this means the nibs or shoulders 35 of the pin or shaft are fitted or seated in the notches of the draw-irons, while the cylindrical portion thereof forms the pivot on which the thill-iron is free to turn, and the pin or shaft is prevented from displacement by the 40 nibs or shoulders thereof impinging upon the sides of the thill-iron, as will be very readily understood.

When it is desired to remove the pin or shaft from the draw-irons, and thereby permit of 45 the removal of the thill-iron in changing the thills for a draft-pole, it is only necessary to turn the thill-iron until it assumes a nearly vertical position to adapt the recess or notch in the eye of the thill-iron to align with the 50 corresponding notches in the draw-irons. The pin or shaft can now be readily removed by moving it endwise by the hand, and the nibs or shoulders thereof ride in the aligned notches or recesses in the draw and thill irons, as is 55 obvious. It will thus be seen that we provide simple and effective means for pivotally connecting the thill and draw irons, which can be easily operated within a moment's time to per-

mit of the ready detachment and connection of the thill or draft-pole. 60

The cushion I is fitted between the thill-iron and the axle, and impinges upon the said iron to prevent it from rattling, and the cushion is also fitted beneath the lip *c'* of the clip to prevent the upward displacement thereof, while 65 it is held from lateral displacement by being fitted between the draw-irons. When the cushion becomes worn through use or it is desired to increase the pressure thereof upon the thill-iron, it is only necessary to tighten 70 the nut on the draw-bolt and thereby move the latter rearwardly, which more firmly compresses the cushion between the thill-iron and axle.

When the cushion becomes worn away to 75 such an extent that it is not desirable to further compress the same by tightening the nut on the threaded end of the draw-bolt, a suitable hard substance can be inserted between the cushion and axle—as, for instance, a metallic plate—to force the cushion forward, and a like plate can be fitted between the draw-bolt and the under side of the axle when it is 80 desired to more firmly tighten the draw-bolt and clip-plate. 85

The operation of our invention will be readily understood from the foregoing description, taken in connection with the drawings.

Having thus fully described our invention, what we claim as new, and desire to secure by 90 Letters Patent, is—

In a thill-coupling, the combination of a clip having its terminal arms provided with transverse aligned openings *c* at their lower ends, a clip-plate having the inclined converging 95 sides passing through the openings in the said arms, and the notches in its under side into which one of the edges of the arms surrounding the openings *c* therein are fitted to thereby draw the terminal arms of the clip together, 100 a longitudinally-tapered draw-bolt passing through the openings in the arms and resting on the clip-plate and provided at its rear end with a threaded portion, the draw-irons on the front end of the draw-bolt in which the 105 thill-iron is pivoted, and a nut fitted on the threaded rear end of the draw-bolt, substantially as described, for the purpose set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures 110 in presence of two witnesses.

JOHN M. SPENCER.  
GEORGE W. BEEBE.

Witnesses:

FRANK D. BROOKS,  
AMOS G. HONNOLD.