No. 626,026. Patented May 30, 1899.

J. W. KOHN.

THILL COUPLING.

(Application filed Sept. 23, 1898.)

(No Model.) 2 Sheets—Sheet 1.

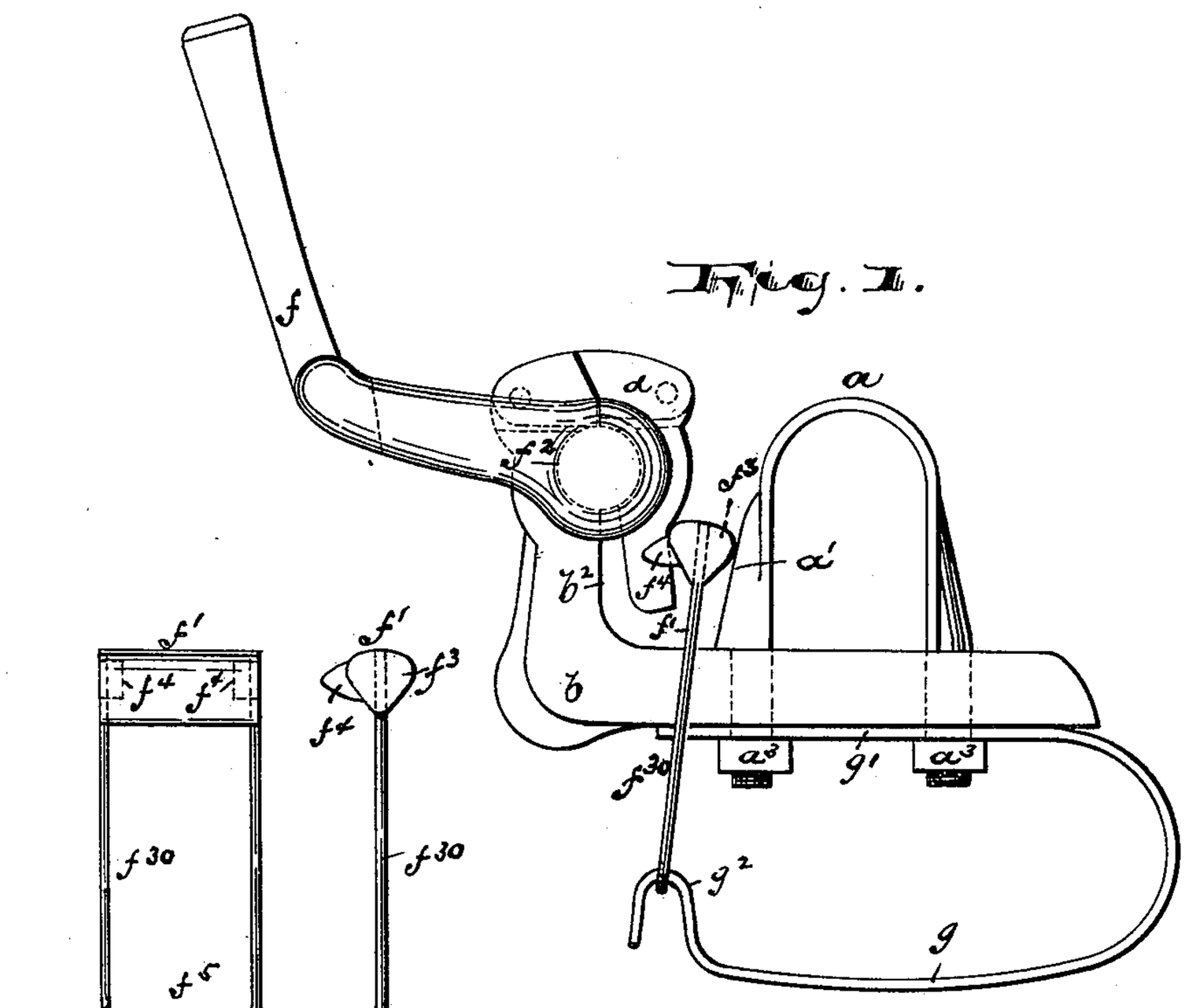

Fig. 1.

Fig. 4. Fig. 5.

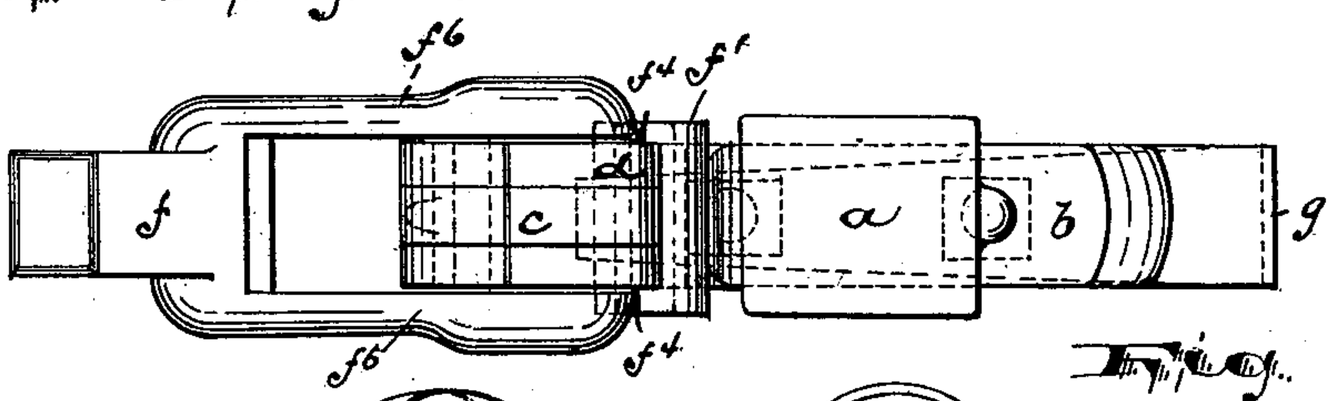

Fig. 2.

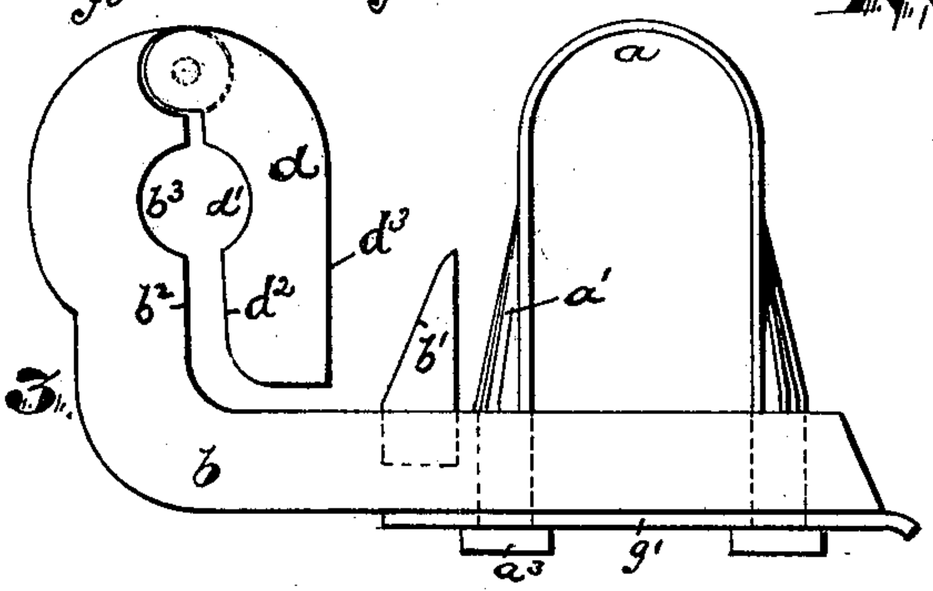

Fig. 3.

WITNESSES:

A. R. Krouse.

Russell M. Everett.

INVENTOR:

Jacob William Kohn,

BY Drake & Co.,

ATTORNEYS.

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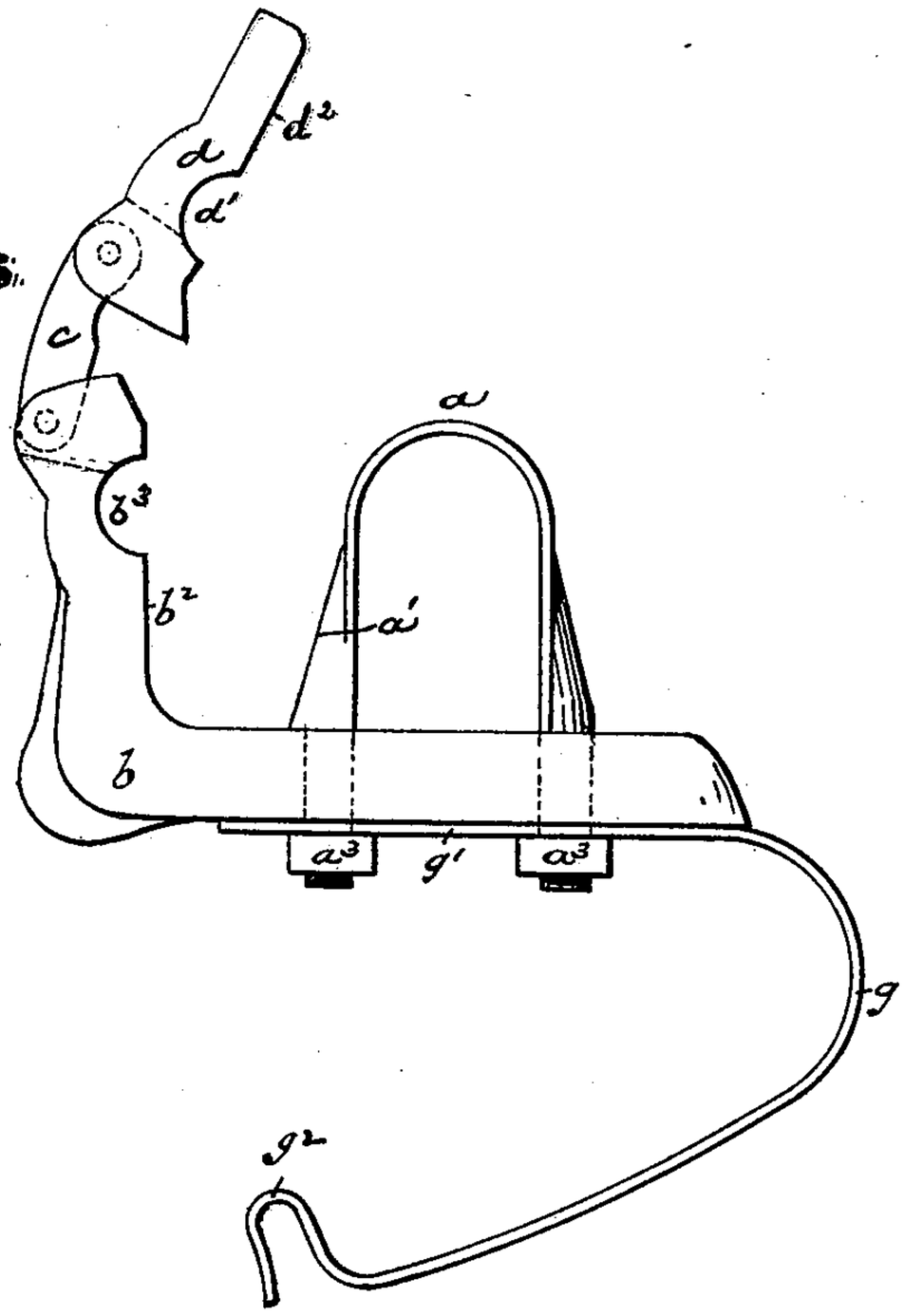
Fig. 6.



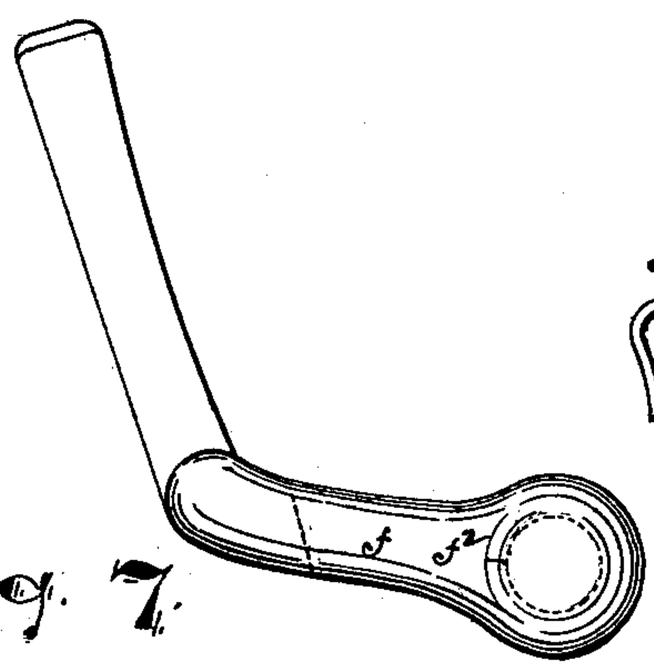


Fig. 7.

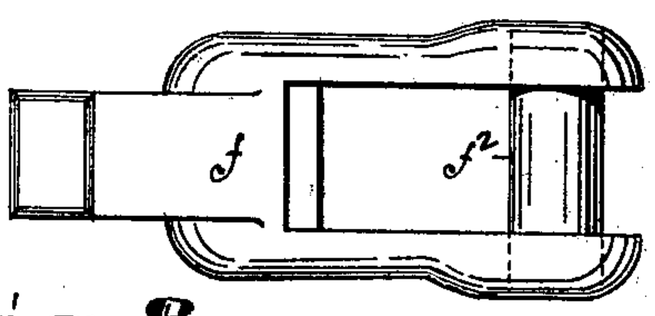


Fig. 8.

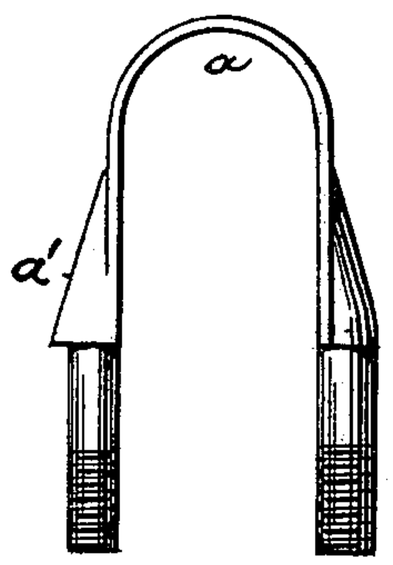


Fig. 9.

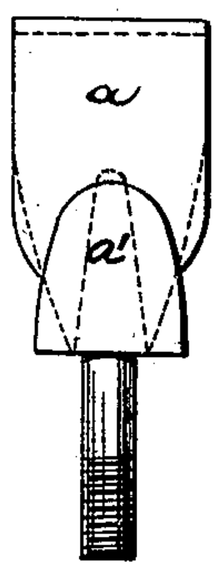


Fig. 10.

WITNESSES:

A. R. Krouse

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INVENTOR:

Jacob William Kohn,

BY Doane & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JACOB WILLIAM KOHN, OF NEWARK, NEW JERSEY.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 626,026, dated May 30, 1899.

Application filed September 23, 1898. Serial No. 691,700. (No model.)

To all whom it may concern:

Be it known that I, JACOB WILLIAM KOHN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Thill-Couplings; and I do hereby 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 letters of reference marked thereon, which form a part of this specification.

The objects of this invention are to facilitate the operation of coupling or uncoupling the thills of wagons, to prevent the thills from rattling when in use, to secure a strong and durable coupling and one that will lock the parts firmly together and take up wear automatically, and to secure other advantages and results, some of which may be referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved thill-coupling and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several views, Figure 1 is a side elevation of the improved coupling. Fig. 2 is a plan of the same. Fig. 3 is a detail of the clip portion of the coupling, showing certain modifications of construction. Figs. 4 and 5 are respectively front and side elevations of a key-piece in detail. Fig. 6 is a side elevation of the shaft-iron clip open. Figs. 7 and 8 are respectively a side elevation and plan of the shaft-iron in detail, and Figs. 9 and 10 are respectively front and side elevations of the axle-clip.

In said drawings, a indicates the shaft-clip.

b represents the body of the shaft-iron clip.

c is a shaft-iron-clip link, and d the clamping-tongue thereon.

f is the shaft-iron, f' the key for fastening the shaft-iron-clip links in position to hold the shaft-iron, and g is the spring for holding said key in locking relation in the coupling with an elastic pressure.

The axle-clip a is of any usual construction adapted to fasten the shaft-iron clip to the axle of the vehicle. It is preferably provided at its forward side with an inclined bearing a', on which the head of the key impinges. This inclined bearing, however, may be formed independently of said clip, as indicated in Fig. 3, where said bearing is formed on a lug b', fastened to or formed on the body b.

At the forward side of the axle-clip the shaft-iron-clip body b at its forward end is bent or turned upwardly and near its upper extremity is provided on its rear or inner wall b^2 with a recess b^3 for the shaft pin or pivot f^2, formed integral with the shaft-iron. On the body b, above said pivotal recess b^3, the link c is pivoted, and on the opposite end of said link from the body b is pivoted the clamping-tongue d, which latter is provided with a pivotal recess d', similar to the one formed in the body b. The clamping-tongue is free to be turned into the space between the wall b^2 and bearing a', as indicated in Figs. 1 and 3, so that the two recesses will be brought into juxtaposition and will receive and hold the pivot in place without looseness. The forward upwardly-turned extension of the shaft-iron-clip body being in a vertical position and the recess b^3 being below the upper extremity and point of pivoting of the link c, the whole draft in operation is brought upon the shaft-iron-clip body and not upon the tongue d or its point of pivoting to the body b. It will thus be seen that the normal draft tends to seat the shaft-iron pivot in its recess, and the tongue d serves the purpose of merely preventing the escape of the shaft-iron pivot from its recess under abnormal conditions. The clamping-tongue d is formed and arranged in its relation to the pivot f^2 so as to engage said pivot and hold the same positively in pivotal relation before the walls d^2 of the tongue d come in contact with the walls b^2, and thus a space is formed between the upturned end of the body b and the tongue, which permits of wear being taken up as the pivot or the bearings therefor wear away. The tongue d in side elevation is considerably smaller than the space between the wall b^2 and the bearing a', and thus when the tongue is in its coupling position a key-space is formed between the wall or bearing d^3 of the tongue and the inclined bearing a', into which the head f^3 of

the key f' may be thrust, the space being of less width toward its bottom because of the inclination of the bearing a'. Into this flaring space the head f^3 is inserted and brought into engagement with the opposite walls or bearings d^3 a', and as it is forced down by the power of the spring g the shaft-iron is clamped and locked, but permitted to move pivotally with a positive movement. The key f' comprises in the construction shown a wire loop f^{30}, formed by doubling the wire so that it will inclose the body b, as shown in Fig. 4, the ends of the doubled wire being attached to the head f' in any suitable manner to complete the continuity of the loop or inclosure and secure an equal draft on said head at opposite ends thereof. The head is preferably provided at or near its ends with stay-lugs f^4, between which the tongue d is arranged, the said lugs preventing any lateral displacement of the head, as will be understood.

Beneath the body b is secured the key-holding spring g. This is bowed, as indicated in Figs. 1 and 6, the base g' of said spring being fastened against the under side of said body by the nuts a^3, which fasten the axle-clip and body b together. At the free end of the spring the same is downwardly hooked, the hook g^2 being adapted to enter through the wire loop of the key and catch on the lower bar f^5 thereof to force the key or the head f^3 thereof hard against the converging walls of the tongue d and bearing a' and hold the parts locked in position with an elastic pressure, by which all wear is taken up immediately and rattling avoided.

Under some conditions I may dispense with the spring g, the key being held in place with sufficient security by the force of gravity.

The pivot f^2 being integral with the ears f^6 f^6 of the shaft-iron, bolts and nuts and the objections incident thereto are avoided.

I am aware that the constructions and arrangements of parts may be varied from what is shown without departing from the spirit or scope of the invention, and consequently I do not wish to be understood as limiting myself by the positive descriptive expressions employed excepting as the state of the art may require.

Having thus described the invention, what I claim as new is—

1. The combination, in a thill-coupling, with the axle, of the shaft-iron-clip body, tongue d, link c, pivoted to both the said body and tongue, a shaft-iron, the pivot of which is adapted to be clamped between said tongue and body, a key for holding said tongue in clamped relation to the body and a spring for holding said key in locked relation to said tongue, substantially as set forth.

2. The combination with the shaft-iron-clip body having an upward extension and back thereof an inclined bearing, a clamping-tongue in connection with said upward extension and at its free end adapted to enter between said extension and inclined bearing and a key adapted to enter between said inclined bearing and said tongue, and means for holding said key in locking position, substantially as set forth.

3. The combination in a thill-coupling, of a shaft-iron-clip body, having a clamping-tongue and an inclined bearing a', a key adapted to be interposed between said tongue and inclined bearing, and means for holding said key in locking position, substantially as set forth.

4. The combination with the shaft-iron-clip body having a tongue and inclined bearing thereon, the opposite faces of said tongue and inclined bearing forming a flaring or V-shaped opening, of a key and a spring for holding said key locked between the tongue and bearing in said opening, substantially as set forth.

5. The combination with the shaft-iron-clip body having a vertical extension at its forward end with a recess at the back to receive the shaft-iron, a link c, pivoted near the extremity of said extension, a tongue pivoted to said link and adapted to lie back of and approximately parallel with said extension, a bearing, a', arranged on said body back of said vertical extension and forming with the tongue a flaring opening or space, a key arranged in said flaring space and a spring holding said key against the converging walls of said space, substantially as set forth.

6. The combination with the shaft-iron-clip body, having an upturned extension with a recess thereon, link c, tongue d, having a corresponding recess, and bearing a', forming with said tongue a space to receive a key and a key held in said space, substantially as set forth.

7. The combination of a body, having an upturned extension, a link c, pivoted thereon, a tongue d, pivoted on said link, a bearing a', a key comprising a loop of wire and a head f', the said head being adapted to be interposed between the tongue and bearing, and a spring arranged beneath said body and adapted to engage the wire loop and hold said key in locked engagement, substantially as set forth.

8. The improved thill-coupling, herein described, comprising a body b, having an upturned forward extension with a recess near its upper end, a link c, a tongue d, the last having a recess coöperating with the recess of the body to receive the shaft-iron pivot, an inclined bearing secured to or formed on said body, a key having the head f', and lugs, and a spring secured beneath said body and having at its free end a hook adapted to engage the key to force the said key with an elastic pressure into locked relation with the tongue, and a shaft-iron having ears and a pivot all formed of one integral piece, substantially as set forth.

9. The combination in a thill-coupling, of a shaft-iron clip having an upward extension and back therefrom an inclined bearing, a

clamping-tongue in connection with said upward extension and at its free end adapted to enter between said extension and inclined bearing, and a key adapted to lie between said tongue and inclined bearing, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 15th day of September, 1898.

JACOB WILLIAM KOHN.

Witnesses:
CHARLES H. PELL,
C. B. PITNEY.