

(No Model.)

M. T. SMITH.
THILL COUPLING.

No. 460,041.

Patented Sept. 22, 1891.

Fig. 1.

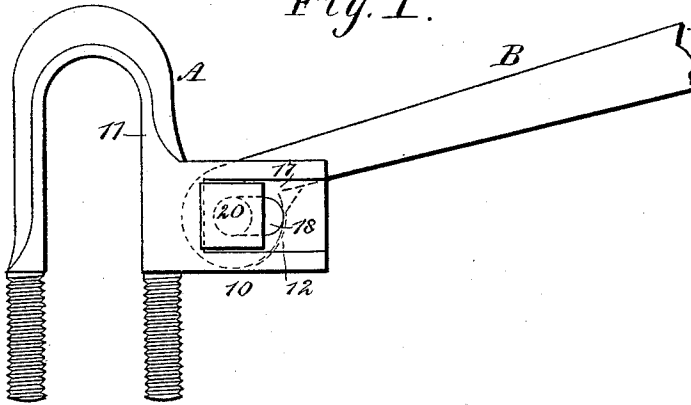


Fig. 2.

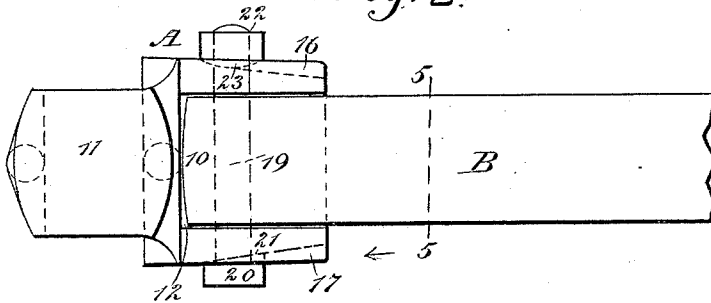


Fig. 3.

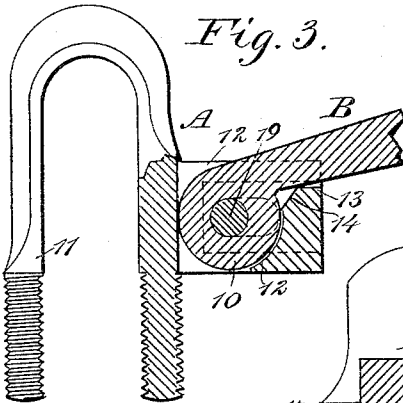
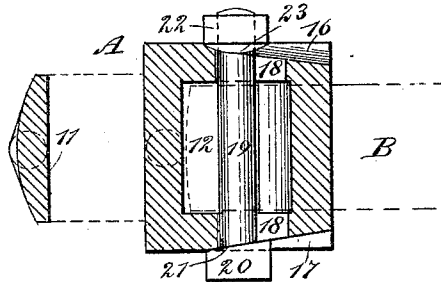


Fig. 4.



WITNESSES:

J. H. Shubert.
C. Sedgwick

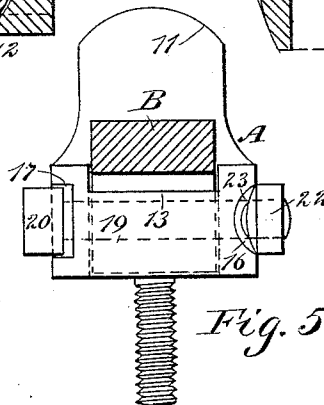


Fig. 5.

INVENTOR:

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UNITED STATES PATENT OFFICE.

MARCELLUS T. SMITH, OF NORTHPORT, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 460,041, dated September 22, 1891.

Application filed May 16, 1891. Serial No. 393,000. (No model.)

To all whom it may concern:

Be it known that I, MARCELLUS T. SMITH, of Northport, in the county of Suffolk and State of New York, have invented a new and useful Improvement in Thill-Couplings, of which the following is a full, clear, and exact description.

My invention relates to thill-couplings, and has for its object to provide a device devoid of springs and washers and anti-rattling, simple, and durable in construction.

A further object of the invention is to so shape the socket-section and coupling-pin of the device that during the act of tightening the pin the eye of the thill-iron will be forced to a firm and regular contact with its seat in the socket, thereby effectually preventing lateral play of the eye.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improved coupling. Fig. 2 is a plan view thereof. Fig. 3 is a vertical section through the coupling, taken near its center. Fig. 4 is a horizontal section; and Fig. 5 is a transverse section through the thill-iron, the coupling proper being in front elevation.

The coupling is constructed in two sections—a socket A and a thill-iron B. The thill-iron is provided with a cylindrical projection 10 at its inner end and an aperture extending through from side to side, the aperture being circular, whereby the inner end of the thill-iron is formed as an eye.

The socket A has integral with its rear surface or attached thereto the usual form of clip 11. The socket is essentially rectangular in general contour and is horizontally located with respect to the clip. The forward wall of the chamber 12 is semicircular or concaved, as best illustrated in Fig. 3. Otherwise the chamber partakes, essentially, of the exterior shape of the socket. The upper portion of the chamber is open, and likewise a portion of its bottom. The upper portion of

the front wall of the chamber is lower than the rear wall, forming a shoulder 13, and preferably the upper portion of this forward wall is provided upon its inner face with a beveled surface 14, likewise best shown in Fig. 3. In one side of the socket an inclined recess 16 is produced, the said recess being semicircular in cross-section, and it tapers from a point at or near the center outward in direction of the front and through the front edge, as shown in Fig. 4, the deepest portion of the recess being at the front end of the socket. An aligning recess 17 is formed in the opposite side of the socket. This latter recess is likewise inclined in the same direction as the recess 16; but it is essentially rectangular in cross-section. Both of the recesses, which may be termed "grooves" or "channels," are horizontally located, and in both of the recessed surfaces, near their inner shallow ends, oblong or elongated openings 18 are produced in the sides of the socket. The coupling-pin 19 is of a diameter to snugly fit in the eye of the thill-iron, and the inner face of the head 20 of the pin is beveled, as illustrated at 21 in Fig. 4, the inclination of the said inner surface corresponding practically to the inclination of the groove or channel 17, in which the head is adapted to fit. The opposite end of the coupling-pin is threaded to receive a nut 22, and the inner face of the nut is convexed, as illustrated at 23 in Fig. 4, said convexed face being adapted to fit in the groove or channel 16 of the socket.

In operation the eye of the thill-iron is placed in the chamber 12 of the socket member of the coupling, as shown in Fig. 3, one curved face of the eye being brought into engagement with the semicircular or concaved wall of said chamber. The coupling-pin 19 is passed through the opening 18 of the socket and through the eye portion of the thill-iron until the inclined face of the pin-head engages with the base wall of the groove or channel 17. The nut 22 is then screwed upon the opposite end of the coupling-pin until its convexed face 23 enters and engages with the walls of the opposite groove or channel 16. It is obvious that when the nut 22 is screwed well up to place it will force the head down the inclined plane of the groove 17, and thus carry the eye of the thill-iron to a firm, posi-

tive, and non-rattling engagement with the forward wall of the socket-chamber. The thill-iron when in its normal position rests upon the shoulder 13 of the socket section or member of the coupling; but the iron may be carried upward to a vertical position whenever it is required, as the upper end of the chamber 12, in which it is pivoted, is entirely open.

10 The coupling is exceedingly simple, comprising but few parts, and is devoid of springs and washers; and whenever the nut 22 becomes slightly loosened, by tightening it the eye of the thill-iron will be brought into such engagement with the forward wall of the socket-chamber that the iron will be prevented from having the slightest lateral play, and consequently the coupling must be a noiseless one.

20 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a thill-coupling, the combination, with a socket member provided with an interior chamber and grooves or channels in its sides inclined from the rear in direction of the front, of a thill-iron terminating in an eye and located in the chamber of the socket-section, a pin passed through openings in the socket member and through the eye of the thill-iron, the inner surface of the head of said pin being beveled, and a nut adapted to enter one of the recesses in the socket-section and screwed upon the pin, the inner face of said nut corresponding in cross-sectional contour to that of the groove or channel, as and for the purpose specified.

2. In a thill-coupling, the combination, with

a socket-section provided with grooves or channels in its sides inclined from the rear inwardly and forwardly and also provided with elongated openings located in its channeled or grooved surfaces, and a thill-iron one end of which is located in the socket, of a pin passed through the openings in the socket, said pin being provided with a head having a beveled inner surface corresponding to the inclination of one of the channels, and a nut secured upon the opposite end of the coupling-pin, the cross-sectional contour of which corresponds to that of the second channel in the socket, as and for the purpose specified.

3. In a thill-coupling, the combination, with a socket provided with an interior chamber, a channel in one side inclined forward and inward and rectangular in cross-section, a channel in the opposite side inclined in the same direction and semicircular in cross-section, and elongated openings in the channeled surfaces extending through to the socket-chamber, of a thill-iron terminating in an eye, the eye being located in the chamber of the socket, a pin passed through the openings in the socket and the eye of the thill-iron, said pin having the inner surface of its head which is adapted to enter the rectangular channel inclined, and a nut screwed upon the opposite end of the coupling-pin and adapted to enter the opposite groove or channel, the inner face of which nut is convexed in cross-section, as and for the purpose set forth.

MARCELLUS T. SMITH.

Witnesses:

SELAH SMITH,
ROWLAND MILES.