

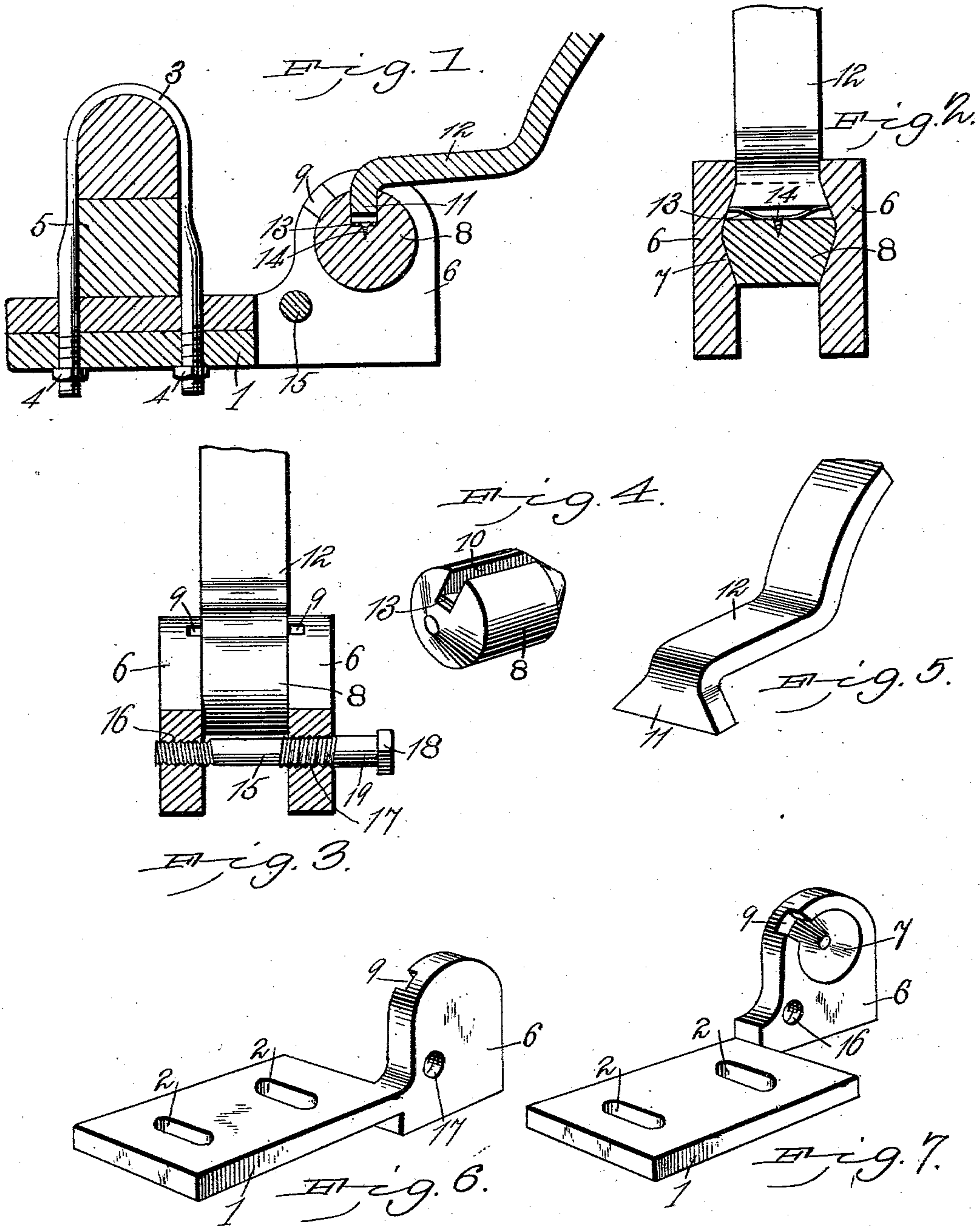
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C. F. GOFORTH.  
THILL COUPLING.

APPLICATION FILED SEPT. 9, 1902. RENEWED NOV. 5, 1903.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES FRANKLIN GOFORTH, OF WICHITA, KANSAS.

## THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 745,596, dated December 1, 1903.

Application filed September 9, 1902. Renewed November 5, 1903. Serial No. 179,998. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES FRANKLIN GOFORTH, a citizen of the United States, residing at Wichita, in the county of Sedgwick and State of Kansas, have invented a new and useful Thill-Coupling, of which the following is a specification.

The invention relates to improvements in thill-couplings.

The object of the present invention is to improve the construction of couplings for thills and poles and to provide a simple, inexpensive, and efficient one adapted to be secured to an axle by clips of the ordinary construction and capable of enabling a pole or a pair of thills to be readily connected to and removed from a vehicle.

A further object of the invention is to provide a coupling of this character adapted to prevent noise and rattling and capable of ready adjustment to take up wear of the bearings without necessitating the removal of the clip-plate from the axle.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a longitudinal sectional view of a coupling constructed in accordance with this invention. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Fig. 3 is a similar view on the line 3 3 of Fig. 1. Fig. 4 is a detail view of the bearing-roller. Fig. 5 is a similar view of the coupling-iron. Figs. 6 and 7 are detail views of the sections or members of the clip-plate, illustrating the arrangement of the ears.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 1 designate sections or members of a clip-plate, and these sections or members, which are fitted together one upon the other, as illustrated in Fig. 1 of the drawings, are provided with transverse slots 2 for the reception of an axle-clip 3 of the ordinary construction having threaded ends and provided with nuts 4, arranged beneath the sections or members 1 and securing the same to an axle 5. The sections or members are provided at their front ends with forwardly-ex-

tending ears 6, arranged at the outer edges of the plates or sections, and provided at their inner faces with conical bearing-recesses 7, adapted to receive a roller 8, which is provided with tapered or conical end portions to fit the conical bearing-recesses 7. The ears are provided with notches or recesses 9, and the roller 8 is provided with a longitudinal groove 10, adapted to register with the notches to permit a head 11 of a coupling-iron 12 to be introduced into and removed from the groove. The conical bearing-roller is rotated rearwardly from the position shown in Fig. 1 to carry the groove backward to the notches or recesses 9, and the thill or tongue to which the coupling-iron is connected must be swung upward and backward to bring the parts in such position, and it will be apparent that it never can assume such position when the vehicle is in use. The head 11 forms an approximately T-shaped coupling-iron, and the sides of the head are inclined to conform to the configuration of the conical ends of the bearing-roller and to fit the bearing-faces of the recesses 7. The parts are effectually prevented from rattling by means of a spring 13, centrally secured by a screw 14 or other suitable fastening device at the bottom of the bearing-roller 8 and having its ends extended upward and engaging the lower face of the head, whereby the inclined edges or faces of the same will be held firmly against the bearing-faces of the conical recesses. The head in practice will be manufactured with a shank, and when the device is to be applied to vehicles in use the eyes of the ordinary thill-irons will be cut off and the heads welded to the irons. By these means the device may be readily applied to any ordinary vehicle.

In order to take up all wear of the parts, an adjusting-screw 15 is employed, and this screw, which is located below and in rear of the bearing-roller, is provided with right and left hand screw-threads for engaging correspondingly-threaded openings 16 and 17 of the ears. The screw is provided at one end with an extension forming a head 18, which is adapted to be engaged by a suitable wrench, and the head is spaced from the adjacent threaded portion of the screw by a smooth portion 19. The screw may be con-



constructed in any other desired manner, and the threads at one end are of less diameter than the threads at the other end to enable the parts to be readily assembled. In assembling the parts one of the ears is arranged on the screw and carried to the smooth outer portion 19 at the outer end of one of the threaded portions. The other ear is then placed at the outer end of the other threaded portion. The screw is then adapted to be rotated to draw the ears inward on the threaded portions, and the parts are readily assembled.

Instead of welding the head 11 to the thill-iron an old coupling or thill iron after having the eye removed may be drawn out and shaped into a head, thereby obviating welding the parts together. The slots 2 may extend entirely to one side or edge of each section or overlapped portion to facilitate separating and assembling the parts, and the spring which engages the thill or coupling iron and which forces the same upward and outward against the bearings of the ears is adapted to automatically throw the coupling or thill iron upward or outward through the notches 9 as soon as the groove is brought into register with the said notches, thereby greatly facilitating the operation of separating or disconnecting the thills or tongue from a vehicle.

It will be seen that the coupling is exceedingly simple and inexpensive in construction, that it is adapted to be readily applied to a vehicle, and that it is capable of enabling a pair of thills or a pole to be readily connected to and removed from a vehicle. It will also be apparent that the spring, which is housed within the roller, is adapted to hold the same and the tapered head of the coupling-iron firmly against the walls of the conical bearing sockets or recesses to form an antirattler and that the overlapped sections or members are capable of adjustment to take up wear of the bearing-roller. It will also be clear that the cone-bearings are practically dust-proof and will not accumulate dust.

What I claim is—

1. A device of the class described comprising the oppositely-disposed ears having conical bearing-sockets, a bearing-roller provided with tapered or conical ends fitting in the bearing-sockets, said roller being provided with a longitudinal groove, a coupling-iron having a head arranged in the groove and provided with tapered ends conforming to the configuration of the ends of the roller, and a flat spring extending longitudinally of the groove and arranged at the bottom thereof

and engaging the head and holding the same and the roller against the walls of the bearing-sockets, substantially as described.

2. A device of the class described comprising outwardly-disposed ears having conical bearing-sockets and provided at their upper portions with notches communicating with the sockets, a bearing-roller having conical ends and provided with a longitudinal groove and fitting in the sockets, a coupling-iron having a tapered head adapted to be introduced into the groove through the said notches, and a flat spring centrally secured to the roller at the bottom of the groove and having free end portions engaging the head and holding the same against the walls of the bearing-sockets, substantially as described.

3. A device of the class described comprising a pair of ears having conical bearing-sockets and provided with perforations having right and left hand threads, a roller having conical ends to fit the sockets and provided with a longitudinal groove, a coupling-iron having a head arranged in the groove and tapered at its ends to conform to the configuration of the ends of the roller, and a screw having right and left hand threads engaging the threads of the ears, said screw being also provided with a smooth extension and having a head at the outer end thereof, substantially as described.

4. A device of the class described comprising two sections or members having slotted overlapped portions and provided with ears having conical bearings and provided with notches, a bearing-roller provided with a longitudinal groove and having tapered ends, a coupling-iron having a tapered head arranged in the groove of the roller, a flat spring mounted within the said groove and engaging the head, and a screw having right and left hand threads and connecting the ears, substantially as described.

5. A thill-coupling comprising a pair of ears each having its inner face recessed, a roller journaled for rotation between the ears with its ends seated in the recesses, said roller having a longitudinal slot, a thill-iron having a head seated in the slot and engaging the marginal walls of the recesses, and a spring disposed in the slot beneath the head.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES FRANKLIN GOFORTH.

Witnesses:

W. A. STIPPICH,  
C. E. LONGTON.