(No Model.)

C. O. HILL & P. W. BLY.

THILL COUPLING.

No. 575,352. Patented Jan. 19, 1897.

Fig. 1.

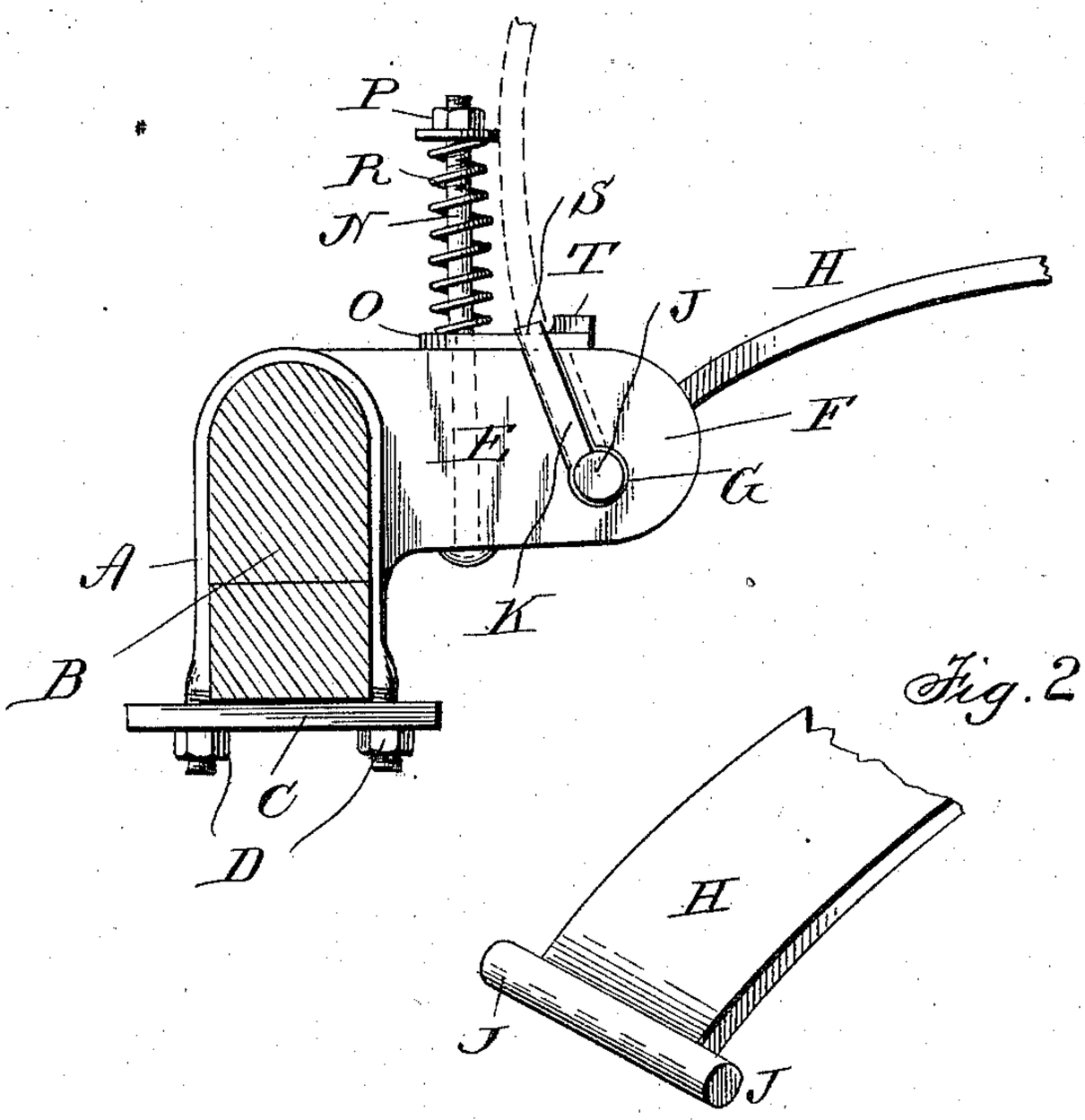


Fig. 2

Fig. 3

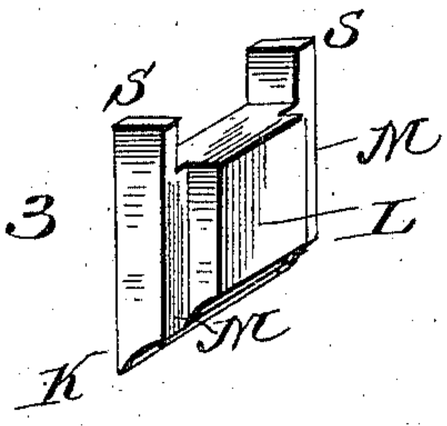
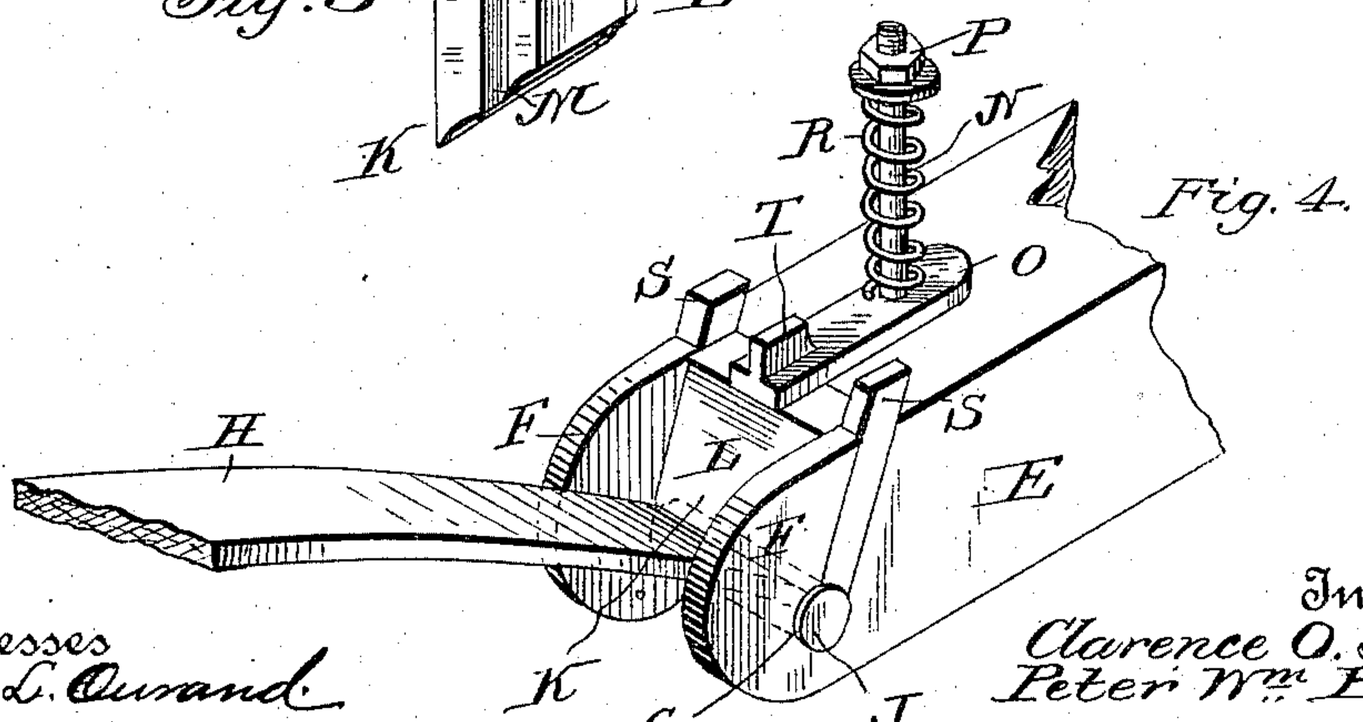


Fig. 4.



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UNITED STATES PATENT OFFICE.

CLARENCE O. HILL AND PETER WM. BLY, OF LEE, ILLINOIS.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 575,352, dated January 19, 1897.

Application filed September 9, 1896. Serial No. 605,295. (No model.)

To all whom it may concern:

Be it known that we, CLARENCE O. HILL and PETER WM. BLY, citizens of the United States, residing at Lee, in the county of Lee and State of Illinois, have invented certain new and useful Improvements in Thill-Couplings; and we do 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 the letters of reference marked thereon, which form a part of this specification.

Our invention has reference to thill-couplings, and has in view the double purpose of providing an efficient and noiseless method of attaching the thills to the axle of the vehicle, and at the same time to render the removal of the thills and the interchange of thills and tongue or pole convenient and quickly accomplished.

The above objects are attained by seating the heel or rear end of each thill between a pair of hooks suitably attached to the clip which embraces the axle of the vehicle and adjustably pressing upon the rear extremity of the thill the edge of an obliquely-pressed key, the upper edge of which receives constant downward pressure from a spring-backed horizontal plate, the lateral rotation of which permits of the withdrawal of said key and the removal of the thill from said hooked attachments.

We attain the foregoing purposes and objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of an attachment embodying our invention, the axle of the vehicle being shown in cross-section. Fig. 2 is a detail of the rear section of one of the thills. Fig. 3 is a detail of the aforesaid key. Fig. 4 is a detail of the front end of the aforesaid attachment with the rear end of the thill resting therein.

Similar letters refer to similar parts throughout the several views.

As the attachment of each of the thills is similar to that of the other, we will show and describe the attachment of but one, which will equally describe and show the attachment of the other.

Referring to Fig. 1, A is the usual clip, which bestrides the axle B from above and is rigidly seated thereon by means of the plate C, placed on the bifurcated members of said clip and against the lower surface of the axle B, and held by the usual nuts D D, adjustably seated on the lower end of the clip A and screwed tightly against the lower surface of the plate C.

With the upper end of the clip A there is integrally formed the head E, which projects horizontally forward in about the plane of the upper end of the clip A, and which may be formed either hollow or solid, as may be preferred. In the forward end of the head E is an upwardly and rearwardly extending slot which forms the upwardly-projecting thill-hooks F F, which contain between themselves and the residue of the head E the circular seats G G for the lateral trunnions formed on the rear extremity of the thill-iron H.

The intervals between the upper extremity of the hooks F and the main portion of the head E is less than the diameter of the trunnions J J of the thill H, but such interval is greater than the vertical diameter of the thill-iron H, so that when the thill is thrown upward in the position shown in dotted lines in Fig. 1 the thill can be removed from its seat G by passing the trunnions J laterally out of the seats G. The flat portion of the thill H readily passing through the aforesaid interval permits of such removal. As it is impossible for the thill H, while in use, to assume the condition aforesaid necessary for its removal, there is no possibility of the casual withdrawing or displacement of the thill H.

The key K is seated edgewise in the aforesaid interval between the hooks F and the residue of the head E and rests at its lower edge upon the trunnion J of the thill. The center portion L of the key K extends over the trunnion J between the hooks F, and thereby widens the pressure of said key upon said trunnion. On the front of the key K, at each side of the portion L, are formed the vertical ways M M to permit the passage of the key K between the upper ends of the hooks F and the residue of the head E. This, with the projection between said hooks of the part L, prevents the lateral displacement of said key.

A bolt N is seated vertically through the

head E and projected a short distance above the upper surface of the latter. A horizontally-oscillating lock O is pivoted on the bolt N in such position that its rear edge rests upon the top of the head E and its front edge upon the upper edge of the key K. A coiled spring R, seated on the bolt N between the lock O and the nut P, exerts a constant downward pressure upon the lock O, by which the key K is held adjustably against the trunnions J and precludes the latter from rattling in their seat.

The lock O when in place rests between the stops S S, formed on the upper edge of the key K, whereby the lock O is held from casually turning, while the looseness of its pivotal seat on the bolt N and the flexibility of the spring R will permit its forward end to be raised sufficiently to permit the lock O to pass over either of the stops S in the operation of removing the thill. A thumb-piece T is formed on the lock O as a means of conveniently grasping the latter. The tension of the spring R can be regulated by the nut P. The bolt N may be used in an inverted position from that shown, but it is more convenient to have the nut P upward.

The operation of our invention is very obvious. The constant pressure of the spring R holds the trunnion J against the front and lower walls of the seats G, and such pressure being constant no objectionable rattling results. By turning the lock O laterally from off the upper edge of the key K the latter can be removed and any exchange of thills and pole effected, or the thill removed for the purpose of storage or shipment, and when the rear end of the thills or pole are placed in the seats G a replacement of the key K and a partial rotation of the lock O thereon restores the parts to their working position.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

In a thill-coupling, the combination, with a clip provided with a forwardly-projecting head, said head being provided with seats and an upwardly and rearwardly extending slot or recess leading from each seat of a less width than the diameter of the seat, a thill-iron, the end of which is provided with trunnions, a key, each side of which is provided with a way to fit within the slots of the head and the lower edge of which key rests upon the end of the thill-iron, and the upper edge is provided with two projections or stops, and a spring-actuated horizontally-rotatable lock upon the top of the head, the outer end of which extends over the top of the key and fits between the stops, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

CLARENCE O. HILL.
PETER WM. BLY.

Witnesses:
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