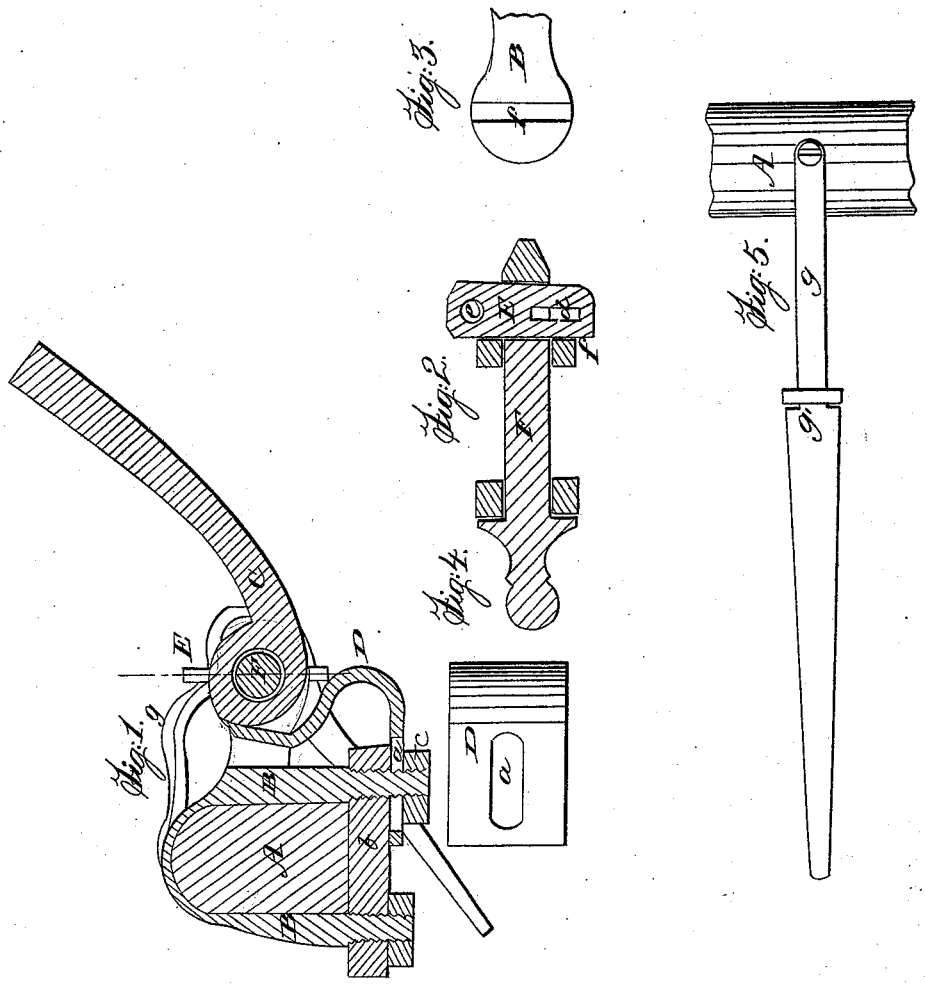
A. & G. WOEBER.

Thill-Coupling.

No 55,192. Patented May 29, 1866.



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UNITED STATES PATENT OFFICE.

A. WOEBER AND G. WOEBER, OF DAVENPORT, IOWA.

IMPROVEMENT IN THILL-COUPLINGS.

Specification forming part of Letters Patent No. **55,192**, dated May 29, 1866.

To all whom it may concern:

Be it known that we, A. WOEBER and G. WOEBER, of the city of Davenport, county of Scott, and State of Iowa, have invented a new and useful Improvement in Thill-Couplings; and we do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical sectional view of our improved thill-coupling; Fig. 2, longitudinal section of the bolt, sides of the clip, and key, as indicated by the line *x y*, in Fig. 1; Fig. 3, view, in detail, of one of the sides of the clip, showing the groove in which the key fits; Fig. 4, bottom view of metallic spring detached from the clip, showing a longitudinal slot; Fig. 5, view, in detail, of strap, a top view of which is shown as attached to the top of the axle and passing through a slot in the key.

Like letters in all figures of the drawings indicate like parts.

The nature of our invention consists in the construction of a metallic spring provided with a longitudinal slot, whereby the spring may be adjusted by reason of the said slot and made to bear, with a greater or less degree of force, upon the eye or eccentric form of the thill-iron, as may be required, particularly when by usage the spring may become weak or the spring and the eye of the thill-iron become worn by friction.

Our invention has reference, further, to a plan of securing the bolt, whereby to prevent the bolt from turning or moving around, and thus causing wear to the same and to the holes in the clip from the friction. It is kept perfectly rigid in its place by means of a double-slotted key passed through a slot in the bolt at the point where the screw-nut usually fits on those now in use, and then into a groove on the side of the clip, the said groove and the said slot, in connection with the key, preventing the bolt turning, as above remarked, the key being held in its place by the peculiar attachment and arrangement of a strap, the same being attached to the axle.

To enable any one skilled in the art to make and use our invention, we will proceed to describe its construction and operation. Those parts which are well known will simply be referred to by letter, as follows:

A is the axle, B the clip, C the thill-iron, D the metallic spring, the invention and application of which in the form as constructed and represented we lay no particular claim to, except in providing the same with a longitudinal slot, *a*, of a suitable size, and by this means render it adjustable.

The spring is placed a suitable distance under the bottom plate or bar, *b*, of the clip, with its end bearing on the eye of the thill-iron. When it is discovered that the spring is weak by usage and fails to bear with sufficient force upon the eye of the thill-iron, when the thill is elevated to the proper position for use, to prevent the unpleasant rattling noise resulting from the turning of the bolt in the holes of the clip and the jarring of the thill-iron against the sides of the same, besides causing a speedy wear to the part, the spring is moved forward and brought to bear with the same degree of force that it had before being weakened, the screw-nut *c* first being loosened and then made tight; or, if the friction between the spring and the eye of the thill-iron is such as to have worn either one or the other, or both, as to cause the spring to fail in having the desired effect, it is adjusted, as in the other case, as may be required.

To render the spring more effective in accomplishing the object as above stated we construct and use, in combination therewith, the key E, made of a slight tapering form, something after the shape of a wedge, in which two slots, *d* and *e*, are made, the one at or near the bottom of a longitudinal shape and the other round. It is then placed in a slot in the bolt F, made to receive it, (see Fig. 2,) the shape of the slot approximating somewhat to the shape of the key, so that the same when therein may be tightened or loosened, as may be desired.

The key, on being placed in the slot as above mentioned, fits into a groove, *f*, made on the side of the clip, (see clearly Fig. 3,) which groove, as will be observed, when the key is in place, prevents the bolt from turning, which, however great the force of the spring or other device in bearing upon the eye of the thill-iron, may be or has been heretofore, whether alone

or in connection with the tightening of the screw-nut on the bolt to prevent it, has not effectually stopped the bolt from turning, which we claim this arrangement does, and relieves it entirely of the friction thus caused.

To hold the key in its place a strap, *g*, is first passed through the round slot in the top of the key, this part, or a suitable portion of it, being made narrower than the other, as will be seen in the top view of the same in Fig. 5, and then fastened in a permanent manner to the axle. That part of the strap beyond the key is made wider than the other, for the purpose of forming a shoulder, *g'*, thereon, and thus hold and prevent the key slipping through when out of its place.

The strap from the shoulder is made suitably long and tapering, so that when the key is in place the tapering end may be inserted in the longitudinal slot at the bottom of the same around and under the bolt. (See Fig. 1.)

The peculiar construction and arrangement of the strap in connection with the key makes this device more desirable and advantageous than the screw-nut, as will be obvious. The screw-nut frequently comes off, becoming loose by usage, and sometimes lost, and thus proves a source of annoyance. The use of the key will be to remedy this entirely, and besides being more convenient when it is desired to remove the thills at any time without having recourse to the use of a wrench, as in the other case, the key being easily removed by simply taking hold of the strap with a slight pull upward. The slipping in and out of the bolt to a great extent injures the screw-threads, so that the screw-nut frequently fails to take hold. This bolt, here described, being without either is not attended with the same difficulty.

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

1. The application of a double-slotted key, E, as constructed and arranged in connection with the strap *g*, as constructed and applied, in combination with the grooved side *f* of the clip B, and bolt F, substantially in the manner and for the purpose as herein set forth.

2. The combination of the key E, groove *f*, and bolt F with the adjustable slotted metallic spring D, substantially in the manner and for the purpose as herein set forth.

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Witnesses:
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