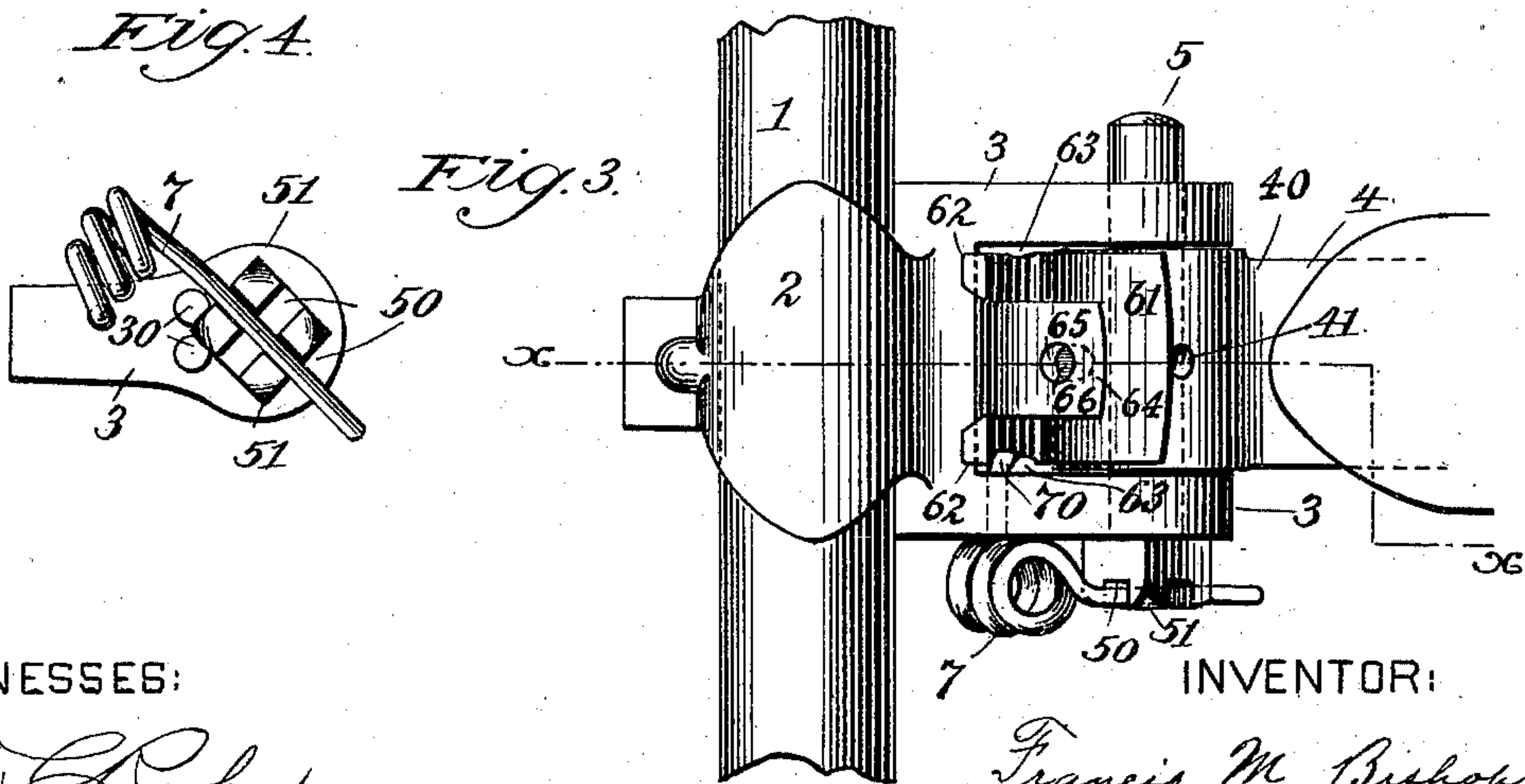
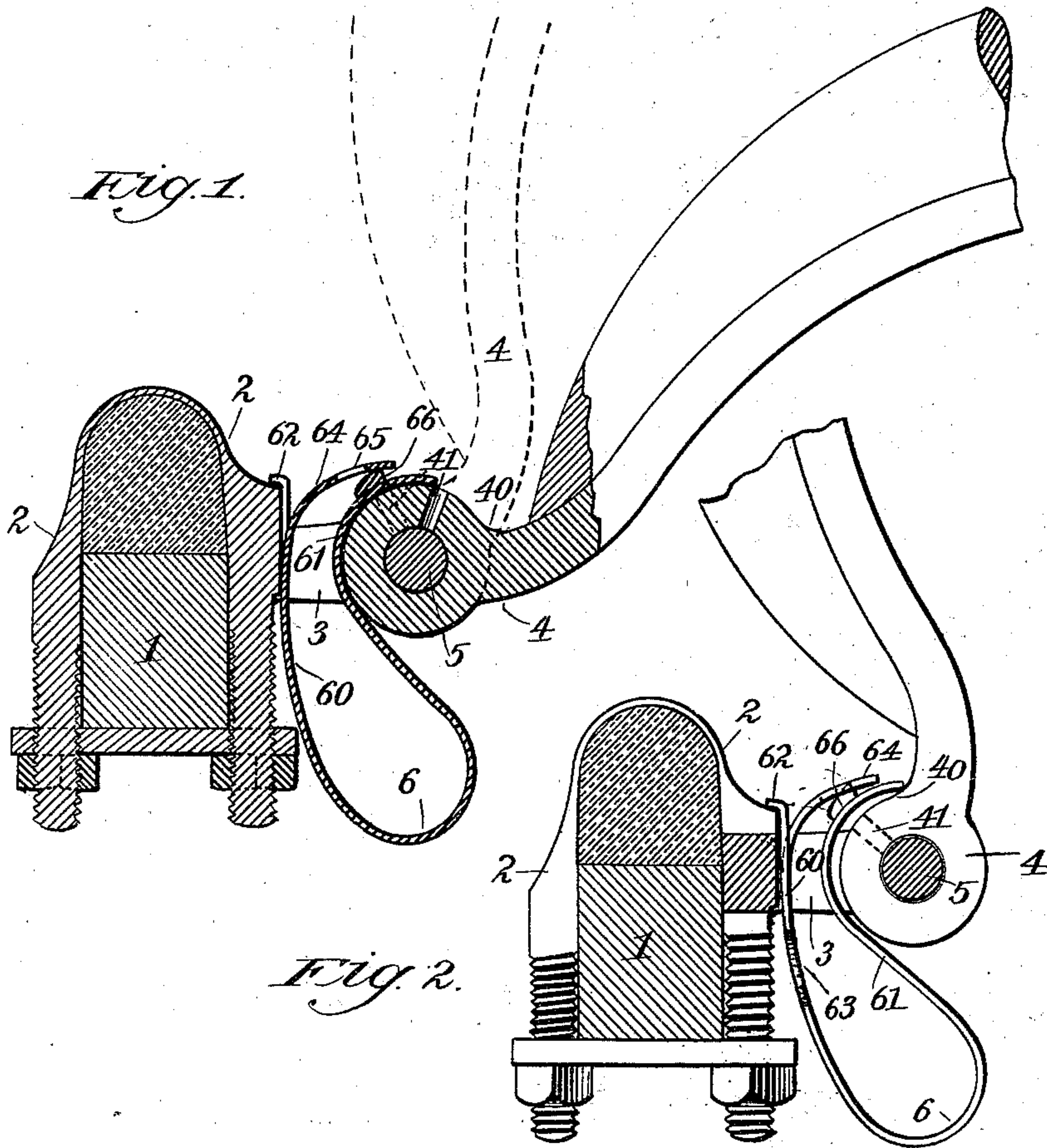


(No Model.)

F. M. BISHOP.
THILL COUPLING.

No. 555,999.

Patented Mar. 10, 1896.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANCIS M. BISHOP, OF NEWARK VALLEY, NEW YORK.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 555,999, dated March 10, 1896.

Application filed November 26, 1895. Serial No. 570,173. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS M. BISHOP, of Newark Valley, in the county of Tioga and State of New York, have invented a certain new and useful Improvement in Thill-Couplings, of which the following is a full, clear, and exact description, reference being made to the accompanying drawings, forming part of this specification.

This invention relates to improvements in thill-couplings which comprise a spring that is arranged to bear against the thill-iron in order to prevent the parts of the coupling from rattling; and the invention consists of the combination, with a thill-iron, of a peculiar spring and of certain other improvements herein described in the construction and arrangement of the parts of such couplings.

On the accompanying sheet of drawings, Figure 1 is a vertical section of the improved coupling fastened to the axle of a vehicle; Fig. 2, a side view of the coupling when one of the lugs is removed; Fig. 3, a plan of the same, on which the plane of Fig. 1 is indicated by the section-line *xx*; and Fig. 4, a detail showing the head of the coupling-pin and means for fastening the pin in the lugs.

Similar reference-numerals designate like parts in the different views.

The object of this invention is the production of a noiseless thill-coupling, so constructed that the engagement and disengagement of its parts to and from each other may be easily effected whenever a pair of thills or a pole is attached to and detached from the vehicle.

The drawings represent the coupling secured to the front axle 1 of a vehicle by means of a clip 2, from which project the lugs 3, the clip and lugs being like those of ordinary thill-couplings. The iron 4 of the thills or pole extends between the lugs 3, and through the lugs and iron passes a pin 5. Behind the iron 4 is a stiff spring 6, whose rear portion, 60, rests against the front of the clip, and whose front portion, 61, bears against the iron and overlaps its upper surface. When the iron is in the position in which it is shown in full lines in Fig. 1, the point 40 on the iron is in front of the end of the spring 6 and the proper distance from it to enable the iron to be turned on the pin 5 into the position indi-

cated by dotted lines without displacing the spring. In the upper part of the iron 4 is an oil-hole 41, through which oil may be applied to the pin 5. When the thills are held as they are if the vehicle is attached to a horse, the oil-hole is covered by the spring 6, so that dust and water are then excluded from it, but when the ends of the thills rest on the ground the oil-hole is exposed in front of the spring where oil may be easily conveyed to it. A thill-coupling, comprising a thill-iron having an oil-hole therein, in combination with a spring or shield arranged with respect to the thill-iron, as above described, forms the subject of another application for a patent, which was filed August 30, 1895, and bears the Serial No. 560,985.

The head of the pin 5 is square, and in it are slots 50, extending across the head and intersecting each other at right angles, and it is beveled at each corner, as appears at 51 in Figs. 3 and 4. A spring 7 is secured in one of the lugs 3 and adapted to rest in either one or the other of the slots 50 in the head of the pin 5. It presses the head of the pin against the lug. The beveled corners 51 of the head render it easy to force the spring over the end of the pin. A guide 30 consisting of projections or a projection on the lug 3 causes the head of the pin to always rest in such a position when it is in contact with the lug that one of its slots is in the right direction to receive the spring 7. The spring may be forced out of the slot and turned far enough to allow the pin to be removed from and replaced in the lugs without hinderance from the spring.

The wire of the spring 7 may pass through the lug and be bent back against the inner face of the lug, as shown at 70, or it may be screwed into the lug and not project beyond its inner face.

The portion 60 of the spring 6 is provided with lugs 62 which extend backward over the front part of the clip. If the spring 7 projects through the lug 3, then the spring 6 has a notch 63 in its edge, and when it is put into its place or removed therefrom it is held so that the notch 63 is at the same level as the end 70 of the spring 7, and is then moved past the projection 70, which extends into the notch as the spring 6 passes it.

On the rear part 60 of the spring 6 is an ex-

tension 64 that projects forward toward the front portion 61 of the spring. In this extension is a hole 65 and on the portion 61 is a stud 66 that is adapted to enter the hole 65.

5 The spring 6 is preferably so formed that it makes contact with the thill-iron over about one-half the surface of a cylinder. The wear on the spring being distributed over a large surface the spring is durable and positively
10 prevents the parts of the coupling from rattling, although it is not so stiff as are many of the thill-springs of ordinary couplings.

If a pair of thills, for instance, is attached to the vehicle and is to be replaced by a pole
15 the thills are first raised until the front portion 61 of the spring 6 of each coupling is forced backward by contact with the thill-iron at the point 40 and the stud 66 enters the hole 65, then the front ends of the thills
20 are lowered to the ground and the thills are uncoupled from the vehicle and the pole is coupled to it. The stud 66 in the hole 65 engages with the extension 64, being pressed against the front edge of the hole 65 by the
25 resilient action of the spring, and holds the front portion 61 of the spring in the position in which it is shown in Fig. 2, or so that it does not bear upon the thill-iron. While it is in that position the pin 5 is easily with-
30 drawn from and replaced in the lugs and iron 4 with the fingers.

After the pole has been coupled to the vehicle an object, such as the blade of a knife, is inserted between the portion 61 and extension 64 of the spring, and these are pried
35 apart by slightly twisting the object held in the hand until the stud 66 is separated from the extension 64, whereupon the spring instantly makes contact with the iron 4 and
40 renders the coupling noiseless.

Should there be neither a pair of thills nor a pole attached to the vehicle and should the parts of the spring not be engaged with each other as they are shown in Fig. 2, they may
45 be thus engaged by holding the spring in both hands and firmly pressing the parts toward each other until the stud 66 enters the hole 65.

It is to be observed that the pin 5 is so held
50 that any one of four portions of its surface

may be made to face the iron 4 on that side of the pin on which there is the greatest wear, so the wear may be distributed on different parts of the pin, and that there is no wear of any consequence on the lugs, since the pin
55 does not turn in the lugs.

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

1. In a thill-coupling the combination of a
60 pivoted thill-iron, and a spring adapted to bear upon the iron, the spring being provided with a holding device whereby it is held temporarily from the iron, and the iron constituting a lever whereby the spring is forced
65 back and the engagement of the parts of the holding device is effected, substantially as described.

2. In a thill-coupling the combination of a
70 pivoted iron 4, and a spring having the portion 61, bearing upon and overlapping the iron, and provided with a holding device comprising an arm, fixed behind the portion 61 and extending toward it, and a fastening whereby the portion 61 is locked to the arm,
75 substantially as described.

3. In a thill-coupling the combination of a pivoted thill-iron 4, and a spring 6 having the rear portion 60, front portion 61, extension 64 on the rear portion, and an eye and
80 stud 65 and 66, substantially as described.

4. A spring, to be applied to a thill-coupling, said spring having the rear portion 60 adapted to rest against the front of the clip, the front portion 61 conforming to the end of
85 the thill-iron, the extension 64 on the rear portion 60, and a catch, one part of which is on the portion 61 and the other on the extension 64, substantially as described.

5. In a thill-coupling the combination of a
90 thill-iron, a spring bearing against the iron, and a bolt having a square head with slots 50 therein at right angles to each other, a spring adapted to rest in the slots, and a guide 30, substantially as described.

FRANCIS M. BISHOP.

In presence of—

FRANK L. ANDREWS,
O. S. RANDALL.