(No Model.) 2 Sheets—Sheet 1.

A. J. RITTER.

THILL COUPLING.

No. 450,919. Patented Apr. 21, 1891.

Fig. 1.

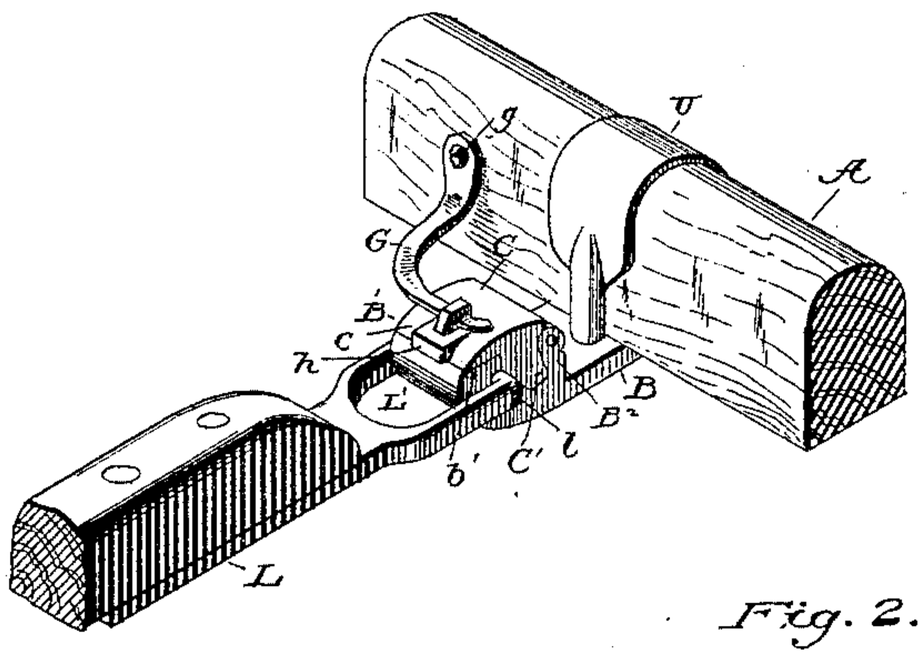


Fig. 2.

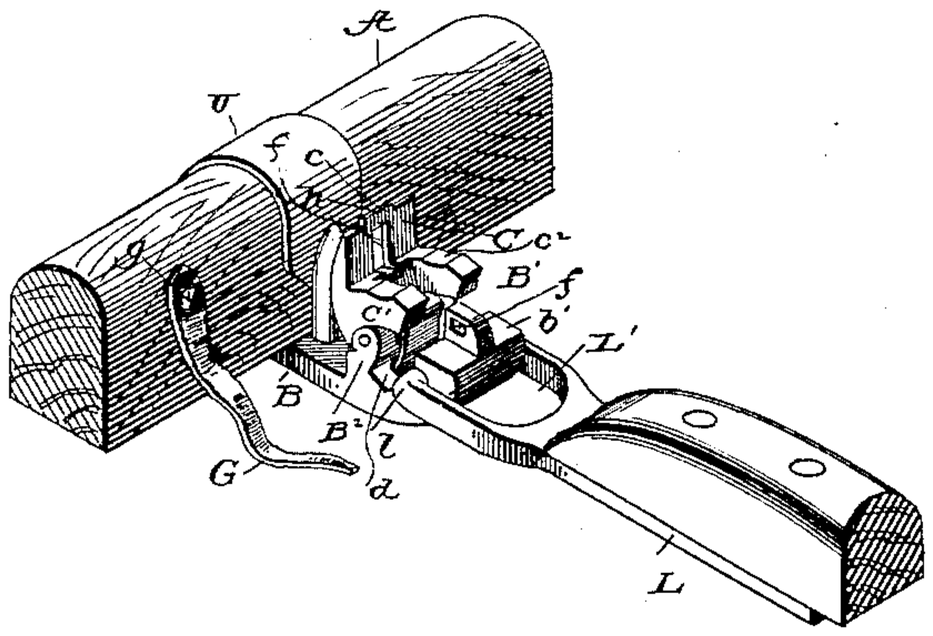
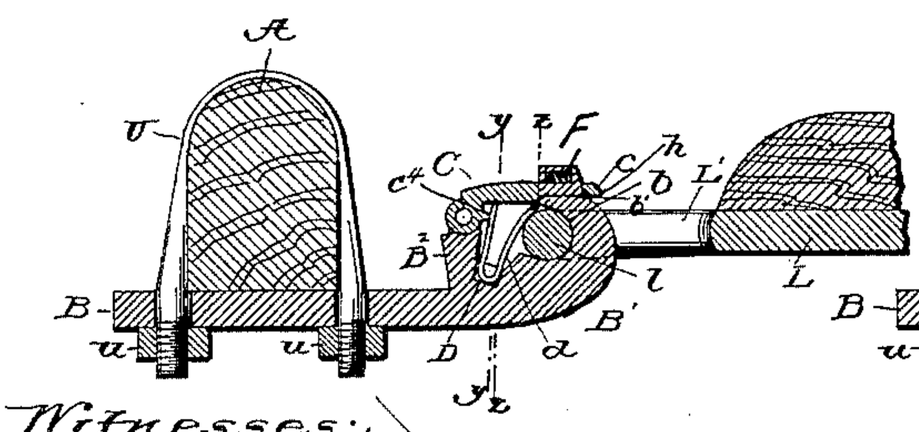
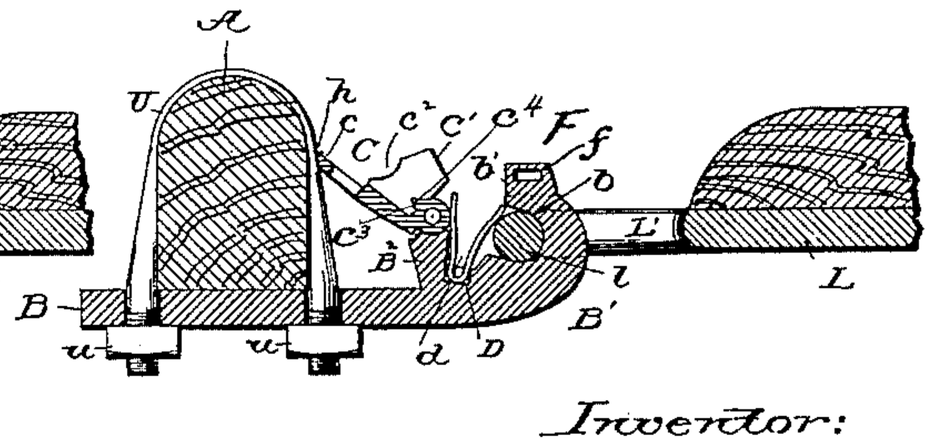


Fig. 3.

Fig. 4.





Witnesses:

W. M. Mortimer

Franklin Moore

Inventor:

A. J. Ritter

By his Attorney

J. R. Littell

(No Model.) 2 Sheets—Sheet 2.

A. J. RITTER.

THILL COUPLING.

No. 450,919. Patented Apr. 21, 1891.

Fig. 5.

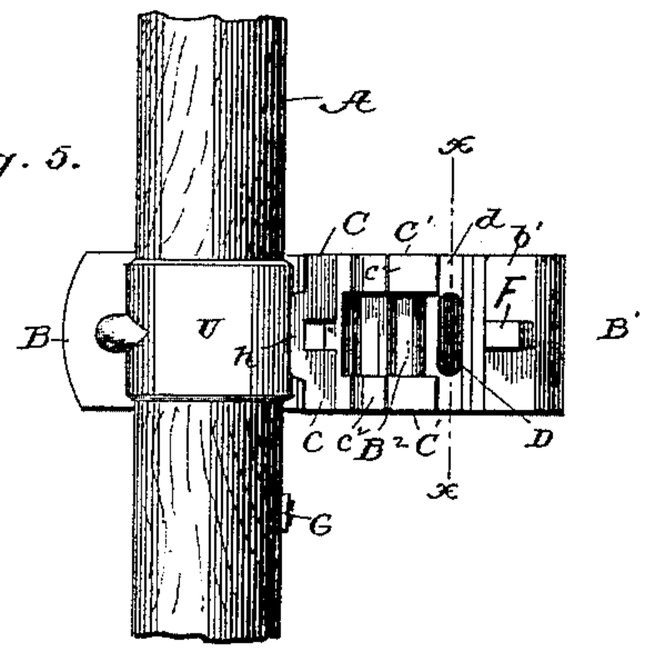


Fig. 6.

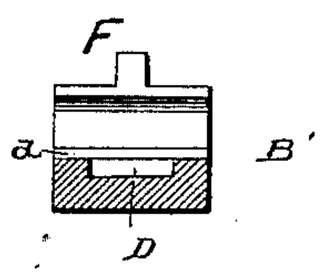


Fig. 7.

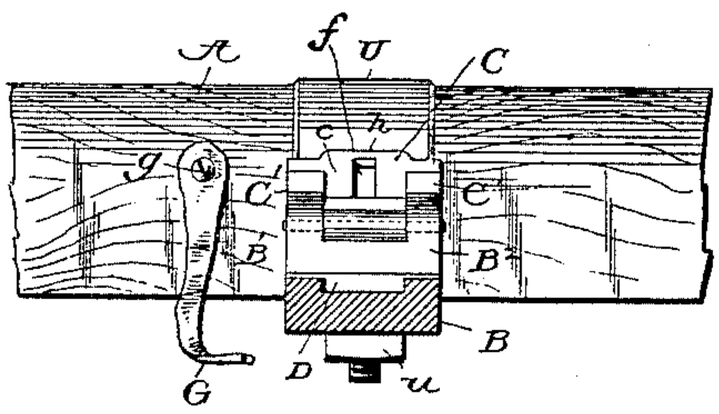


Fig. 8.

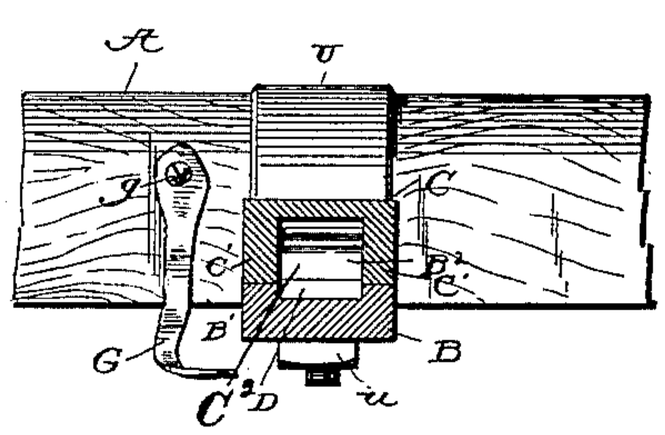


Fig. 9.

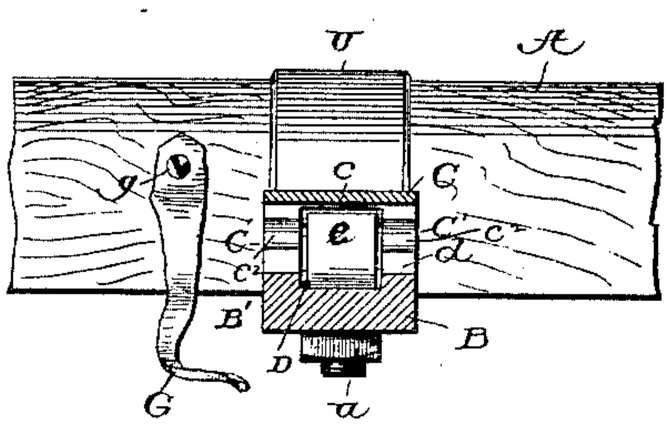
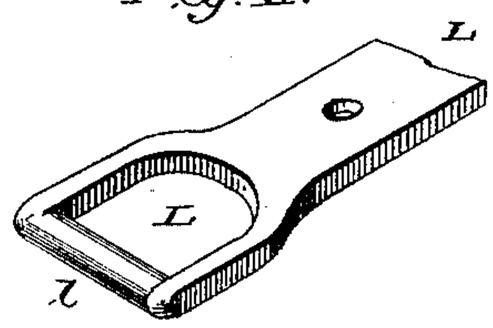


Fig. 10.

Fig. 11.



Witnesses:

W. W. Mortimer

Franklin Moore

Inventor:

A. J. Ritter

By his Attorney J. R. Littell

UNITED STATES PATENT OFFICE.

ANDREW J. RITTER, OF TOMBSTONE, ARIZONA TERRITORY, ASSIGNOR OF ONE-HALF TO D. A. MACNEIL AND F. L. MOORE, BOTH OF SAME PLACE.

THILL-COUPLING.

SPECIFICATION forming part of Letters Patent No. 450,919, dated April 21, 1891.

Application filed September 19, 1890. Serial No. 365,536. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. RITTER, a citizen of the United States, residing at Tombstone, in the county of Cochise and Territory of Arizona, have invented certain new and useful Improvements in Thill-Couplings; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of thill-couplings which employ a spring-bearing against the end or eye of the thill-iron and adapted to take up wear and prevent "rattling."

The object of my invention is to provide an improved thill-coupling possessing advantages in point of simplicity and inexpensiveness in construction, durability, and effectiveness in operation, convenience of adjustment, and general efficiency, and by which the employment of bolts and nuts is effectively obviated in this class of devices.

In the drawings, Figure 1 is a perspective view of a thill-coupling illustrating my invention. Fig. 2 is a corresponding view showing the coupling open. Fig. 3 is a vertical longitudinal sectional view. Fig. 4 is a sectional view showing the coupling open. Fig. 5 is a top or plan view of the coupling, showing it open and with the thill-iron and spring removed. Fig. 6 is a vertical transverse sectional view on the line *x x*, Fig. 5, looking forwardly. Fig. 7 is a corresponding sectional view looking rearwardly. Fig. 8 is a vertical transverse sectional view on the line *y y*, Fig. 3, the spring and thill-iron being removed. Fig. 9 is a vertical transverse sectional view on the line *z z*, Fig. 3. Fig. 10 is a detail perspective view of the spring. Fig. 11 is a detail perspective view illustrating the eye or end of the thill-iron.

Corresponding parts in all the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the axle of a vehicle, against the under side of which the main plate B of my improved thill-coupling is secured by means of the usual clip U and nuts *u u*. The front end of the plate B is extended, as shown, to form the coupling, the latter being thus provided at the front end of the plate, and is preferably formed integral therewith. At the front end of the plate is thus formed an enlargement or head B′, the front portion of which is preferably curved in contour and is provided in its rear or inner face with a transverse groove or recess *b*, adapted to receive the cylindrical cross-piece *l* at the rear end of an approximately U-shaped eye or opening L′, provided at the rear end of the thill-iron L and adapted to embrace the coupling device, as shown.

Upon the upwardly-projecting rear wall or portion B^2 of the head B′ is hinged the cap or cover C, the said rear wall and the cap or cover being of a width corresponding to the curved front end, and the cap-piece is extended forwardly at its front end to form a flat lip *c*, adapted to rest upon the corresponding top surface *b′* of the curved front end.

D designates a transversely-disposed recess which is formed in front of the rear wall B^2 and in rear of the recess or groove *b*, and is adapted for the reception and retention of the lower end of the spring, as hereinafter set forth, a transverse groove or depression *d* being preferably formed in the head or enlargement B′ between the rear wall B^2 and the groove *b*, in the bottom of which groove *d* the recess D is formed. In this preferred form of construction the side walls C′ C′ of the cap-piece C are extended downwardly, so that their ends *c′ c′* are received by the corresponding ends of the groove *d*. The side walls C′ C′ are relatively located at each end of the groove *d* and serve to retain the spring against lateral displacement, and by the preferred construction and arrangement just described the recess D is provided at a depth best adapted to bring the spring on a plane sufficiently low to insure its effective operation against the eye of the thill-iron. The front faces of the side walls C′ C′ are preferably concaved, as shown at c^2 c^2, to correspond to the cylinder of the groove *b* and form the rear wall thereof, and it will also be noted that the groove *b*, the groove *d*, and the recess D are all preferably arranged at an angle from the horizontal on a plane extending downwardly and outwardly, so that the spring is thrown securely forward and has a positive bearing against the eye of the thill-iron.

In the construction of the cap-piece above described a recess or chamber C^2 is formed by the side walls and top of the cap-piece for the reception and accommodation of the spring, and in the rear at the top of this chamber is preferably provided a transverse ridge c^4, which may be formed by an auxiliary recess c^3 and bears against the end of the rear wing of the spring when the cap-piece is pushed down to set the spring and increase the tension. The spring E is preferably formed of a flat steel plate bent upon itself at the center, and thus having two upwardly-projecting divergent arms *e e'*, the front one of which *e* is preferably curved or concaved to conform to the curvature of the cylindrical bar at the end of the thill-iron. The central portion of the spring is received by the recess D, while its arms project upwardly and are retained between the side walls C' C' of the cap-piece C, in which position the rear arm *e'* of the spring bears against the rear wall of the recess C^2, while its front curved arm *e* bears against the cylindrical cross-piece of the eye of the thill-iron, and thus serves to retain the latter against displacement and prevent rattling at the joint.

The cap-piece C may be locked in position in any suitable manner; but the construction herein shown is preferred, in which a tongue F projects from the top *b'* of the front portion of the head or enlargement B' and is received by a corresponding opening *f* in the front portion of the cap-piece, the projecting tongue being provided with an eye *f'*, through which is inserted the end of a flexible retaining-strip G. The strip G is preferably formed of leather and has its end secured by a screw *g* or in any other suitable manner to the axle A, adjacent to the thill-coupling.

At the front edge of the cap C is provided a lip *h*, adapted to be engaged in any suitable manner to throw the cap-piece back on its hinges and open the coupling.

In practice to couple the thill to the coupling the eye of the thill-iron is first engaged over the front end of the head or projection, with the cylindrical cross-piece *l* resting in the corresponding groove *b*. The spring is then placed in position with its curved front arm resting against the cross-piece *l* and the cap-piece is brought down on its hinges, thus setting the spring and locking the parts in normal position. To disconnect the thill it is only necessary to raise the cap-piece and spring the thill-iron from its engagement with the head or projection.

It will be noted that in my invention no bolts or nuts, which have proven very objectionable in couplings of this character, are used.

I do not wish to be understood as limiting myself to the precise construction and arrangement of parts herein shown and described, as my invention is susceptible of numerous apparent modifications, and I therefore reserve the right to all such modifications or variations as properly fall within the spirit and scope of my invention and the terms of the following claims.

I claim as my invention and desire to secure by Letters Patent of the United States—

1. An improved thill-coupling comprising the head or projection having the transverse groove or recess formed in the rear face of its front portion, a cap-piece or top hinged to the rear portion of said head or projection and provided with a recess or chamber for the accommodation of the spring, a recess formed in the head or projection under the chamber in the cap-piece, and a spring adapted to be received by said recess and having upwardly-divergent arms, substantially as and for the purpose set forth.

2. An improved thill-coupling comprising the head or projection having the transverse groove or recess formed in the rear face of its front portion and having the upwardly-projecting rear wall or portion, the transverse groove formed between said rear wall and the front recess and provided at its bottom with a transversely-disposed recess, the cap-piece hinged to said rear wall and having the downwardly-projecting side walls, the ends of which are adapted to be received by said grooves and forming a chamber for the accommodation of the spring, and a spring adapted to be received and retained by the recess in the groove and having the upwardly-divergent arms, substantially as and for the purpose set forth.

3. An improved thill-coupling comprising the head or projection and having the transverse groove or recess formed in the rear face of the front portion and having the upwardly-projecting rear wall or portion, a transverse groove formed in front of the latter and provided with a transversely-disposed recess in its bottom, the cap-piece hinged to said rear wall and having the downwardly-projecting side walls forming a chamber or recess for the accommodation of the spring and provided with curved or concaved front faces, and the spring adapted to be received by the recess in the bottom of the groove and having the upwardly-divergent arms, substantially as and for the purpose set forth.

4. As an improvement in thill-couplings, the combination, with the head or enlargement having a transverse groove or recess formed in the rear face of its front portion, a transverse groove in its bottom in rear thereof, a transversely-disposed recess formed in the bottom of said groove, and a rear wall or portion, and with a cap-piece hinged to the latter and having downwardly-projecting side walls forming a chamber or recess for the accommodation of the spring and having the curved or concaved front faces, of a thill-iron provided with an eye in its rear end having a transverse cylindrical cross-piece, and a spring received by the recess in the bottom of the groove and having upwardly-divergent arms, one of which bears against the cross-

piece of the thill-iron and the other against the rear wall of the chamber in the cap-piece, substantially as and for the purpose set forth.

5. The combination, in a thill-coupling, with a head or enlargement adapted to receive the thill-iron and provided with an upwardly-projecting tongue having an eye or perforation, and the cap-piece hinged upon said head and having an opening receiving said tongue, of a flexible cord or strip secured to the axle and having its free end adapted to be received by the eye in said tongue, substantially as and for the purpose set forth.

6. In a thill-coupling, the combination of a head or enlargement provided with a transverse groove or recess adapted to receive the thill-iron and with a recess in rear thereof, a cap-piece or top hinged to the rear portion of said head and provided with downwardly-projecting sides forming a recess or chamber for the accommodation of the spring, a flat spring having its central portion received by the recess in the head and provided with upwardly-divergent arms accommodated between the sides of the hinged cap-piece, and means for locking the cap-piece in closed position, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ANDREW J. RITTER.

Witnesses:
H. T. FISHER,
HOWARD F. HERRING.