No. 886,578. PATENTED MAY 5, 1908.

C. C. BRADLEY.

THILL COUPLING.

APPLICATION FILED NOV. 19, 1907.

Fig. 1.

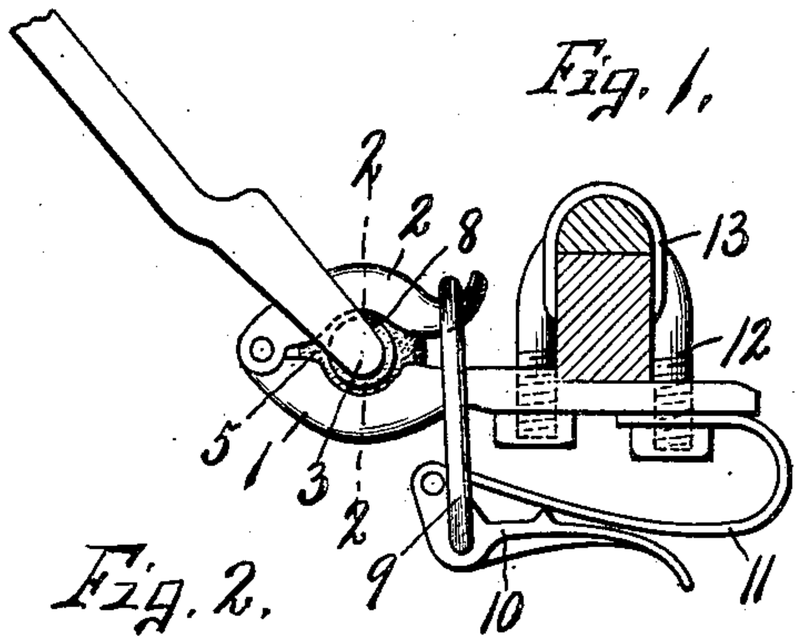


Fig. 2.

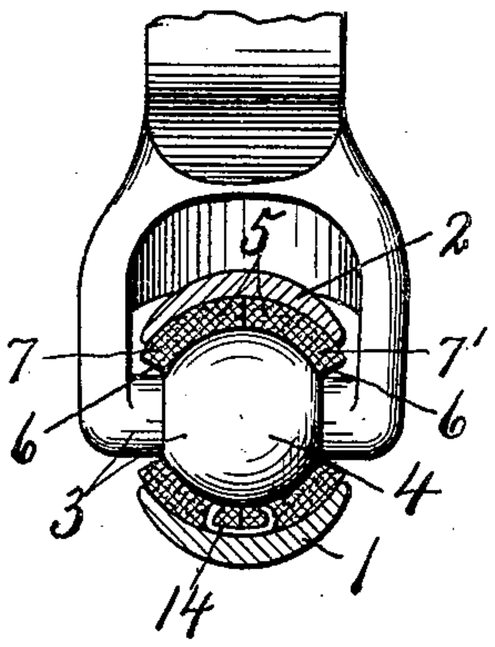


Fig. 3.

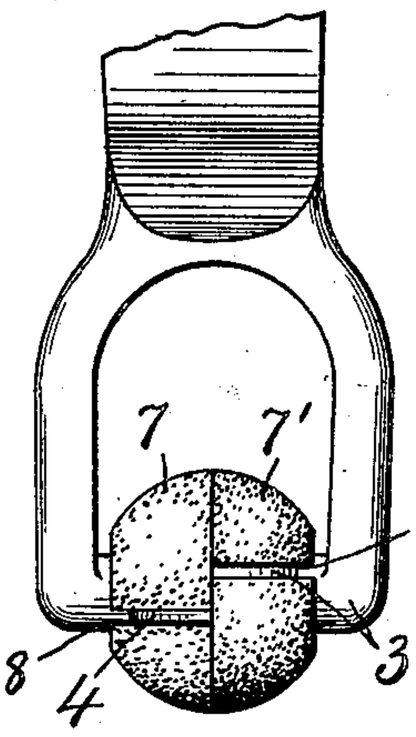


Fig. 4.

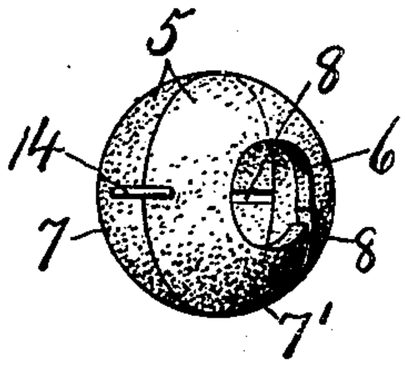


Fig. 5.

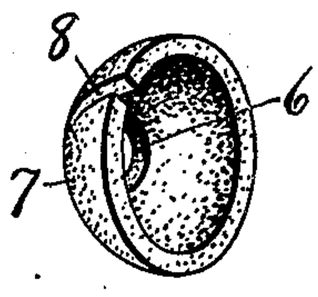
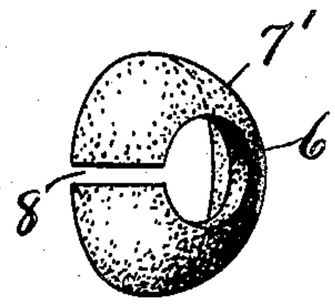


Fig. 6.



Witnesses.

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UNITED STATES PATENT OFFICE.

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THILL-COUPLING.

No. 886,578. Specification of Letters Patent. Patented May 5, 1908.

Application filed November 19, 1907. Serial No. 402,827.

To all whom it may concern:

Be it known that I, CHRISTOPHER C. BRADLEY, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Thill-Couplings, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in thill couplings of the quick shift type and refers more particularly to a packing or sleeve of suitable material clamped between the coupled parts to prevent contact of one of the coupling sections with the other to thereby reduce the incidental friction, wear and noise to a minimum.

The particular style of coupling to which my improved packing is specially adapted is commonly known as the spherical knuckle type in which one of the coupling elements is provided with a spherical member adapted to be held in and released from the grasp of a pair of jaws, one of which is movable relatively to the other and yieldingly held in its closed position to automatically take up the wear.

In my former patent No. 609,928, issued Aug. 30, 1898, I have shown a spherical packing split through one side and truncated at the ends and adapted to be placed over and upon the spherical portion of the coupling and to be grasped by the jaws and while this former spherical packing is particularly effective and desirable I have found that I can form a similar packing from narrower strips of leather split through one side and pressed into semi-spherical form which when brought together form a spherical packing divided midway between its ends at substantially right angles to its axis, such ends being perforated and, therefore, truncated for the reception of the coupling pin.

The particular object in dividing this packing at substantially right angles to its axis is that the lengthwise slits of each semi-spherical shell may be moved out of registration with one another so as to break the continuity of the longitudinal slit from end to end thereby bringing portions of the packing of one-half section opposite to the slits of the other half section and reducing by half the possibility of entering of dirt into the bearing should the longitudinal slit be exposed at the open side of the jaws.

Another purpose of this construction is that the opposite semi-spherical sections after being adjusted so that their longitudinal slits are out of alinement with each other may be reunited at one point by a staple driven through the meeting edges and clenched against the spherical knuckle thereby preventing accidental removal or loss of the packing when the thills or pole is being removed.

Other objects and uses will be brought out in the following description.

In the drawings—Figure 1 is a side elevation of a thill coupling shown as operatively mounted upon an axle with my improved packing grasped between the jaws. Fig. 2 is an enlarged sectional view taken on line 2—2, Fig. 1. Fig. 3 is a top plan of the coupling pin and my improved packing mounted thereon. Fig. 4 is a perspective view of the detached spherical packing showing the semi-spherical sections as united at their meeting edges. Figs. 5 and 6 are perspective views of the opposite semi-spherical packing sections.

In order to demonstrate the practicability of my invention, I have shown a thill coupling comprising a fixed jaw —1—, a movable jaw —2— hinged at the front end to the fixed jaw —1—, and a coupling pin —3— for a spherical knuckle or bearing —4— around which is fitted my improved spherical packing —5— of leather or other suitable material, said spherical packing being provided with truncated ends having openings —6— therein and is also divided circumferentially or at right angles to its axis midway between its truncated ends forming opposite spherical sections —7— and —7′— each of which is split longitudinally at —8— through one side to enable said semi-spherical sections to be sprung apart and placed over the coupling pin and fitted upon the opposite ends of the spherical bearing —4— with their bases abutting against each other. These semi-spherical sections are preferably formed to the desired shape in a suitable press so that they will retain their form, which press may be one of the thill couplings or any other device capable of receiving the blanks and pressing them into shape around a spherical knuckle or die. The manner of forming these sections either before or at the time of application to the thill coupling is

immaterial so long as they are brought into conformity with the spherical surface of the coupling pin with their meeting edges in close proximity.

When the spherical packing sections are formed the meeting edges at their longitudinal division are sprung apart sufficient to allow them to be sprung over the opposite end of the spherical knuckle —4— with the bases of said sections in juxta-position after which one or the other of said sections is rotated independently of the other to bring the longitudinal slits out of alinement with each other as best seen in Fig. 3, said packing sections being usually adjusted circumferentially so as to bring both slits out of registration with the open sides of the jaws whereupon the jaws which are provided with inner concave or spherical bearing faces are brought together to grasp and inclose the greater portion of the packing at opposite sides of the coupling pin after which the movable jaw may be held in its closed position by a movable link —9— which is pivoted at one end to a lever —10—, the latter being in turn pivoted to one end of a U-shape spring —11—, said spring being pivoted upon the lower end of one of the bolts —12— of a clip —13— so as to enable the spring with the lever —10— and the link thereon to be swung laterally when the link —9— is thrown out of engagement with the movable jaw.

In some instances after the semi-spherical sections have been adjusted to bring their longitudinal slits out of alinement with each other it may be desired to tie the meeting edges or faces of said sections together at one point and this may be done by simply driving a staple —14— through said meeting edges and clenching said staple against the inclosed spherical knuckle —4— thereby permanently holding the spherical sections in their adjusted position relatively to each other and preventing accidental displacement of the spherical packing when removing the coupling pins from the jaws.

One of the advantages in dividing the spherical sections midway between its ends at right angles to its axis is that I am enabled to use narrower strips of leather or other material from which the packing is formed but the principal objects are to shorten the longitudinal slit by bringing the slits of each section out of registration with each other so that at least one of them will be covered by one or the other of the jaws thus reducing the liability of accumulations of dust or dirt upon the spherical bearing or knuckle and at the same time making it easier to spring the meeting edges of each section apart placing it on the coupling pin, especially when these sections are formed under high pressure.

What I claim is:

1. In a thill coupling, a coupling pin having a spherical portion in combination with a spherical packing divided circumferentially midway between its ends forming opposite semi-spherical sections, each section being split longitudinally through one side.

2. In a thill coupling, a coupling pin having a spherical portion in combination with a spherical packing divided circumferentially midway between its ends forming opposite semi-spherical sections, each section being split longitudinally through one side, one of said sections being adjusted circumferentially to bring its longitudinal slit out of alinement with that of the other section.

3. In a thill coupling, a coupling pin having a spherical bearing, in combination with a spherical packing having open truncated ends and divided at substantially right angles to its axis between its ends, and means for tying the edges together at one point leaving the remaining portions of said meeting edges free to spring apart.

4. In a thill coupling, a coupling pin having a spherical bearing, in combination with a spherical packing having open truncated ends and divided at substantially right angles to its axis between its ends, means for tying the edges together at one point leaving the remaining portions of said meeting edges free to spring apart, each packing section being split longitudinally through one side.

5. In a thill coupling, a coupling pin having a spherical bearing, in combination with a spherical packing having open truncated ends and divided at substantially right angles to its axis between its ends, means for tying the edges together at one point leaving the remaining portions of said meeting edges free to spring apart, each packing section being split longitudinally through one side, said packing sections being adjusted relatively to each other to bring their longitudinal slits out of alinement.

6. In combination with a pair of jaws, a coupling pin of a thill coupling, a packing surrounding the coupling pin and divided circumferentially at right angles to its axis substantially midway between its ends, each packing section being split longitudinally through one side.

7. In combination with a pair of jaws, a coupling pin of a thill coupling, a packing surrounding the coupling pin and divided circumferentially at right angles to its axis substantially midway between its ends, each packing section being split longitudinally through one side and adjusted relatively to the other section to bring the longitudinal slit of one section out of alinement with the other.

8. In combination with a pair of jaws, a coupling pin of a thill coupling, a packing surrounding the coupling pin and divided circumferentially at right angles to its axis substantially midway between its ends, each

packing section being split longitudinally through one side and adjusted relatively to the other section to bring the longitudinal slit of one section out of alinement with the other, and means for tying the meeting edges of said sections together at one point.

In witness whereof I have hereunto set my hand this 5th day of November 1907

CHRISTOPHER C. BRADLEY.

Witnesses.
H. E. CHASE,
C. M. MCCORMACK.