

M. W. St. JOHN.
Ball and Socket Joints.

No. 142,293.

Patented August 26, 1873.

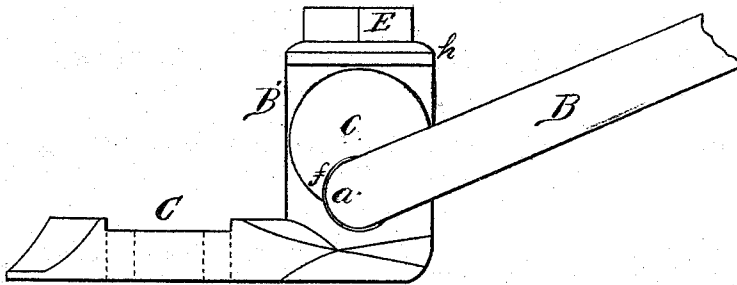


Fig. 1.

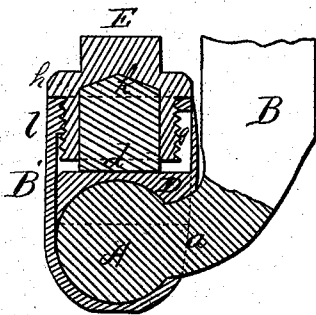


Fig. 2.

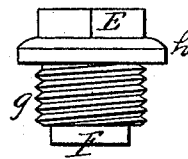


Fig. 3.

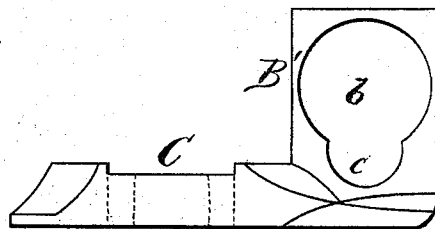


Fig. 4.

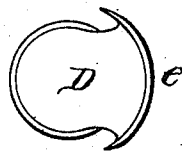


Fig. 5.

Witnesses.

George E. Vephau,
Chas. F. Steele

Inventor.

Milton W. St. John,
Chipman, Hosmer & Co.,
Attorneys.

UNITED STATES PATENT OFFICE.

MILTON W. ST. JOHN, OF LEONARDSVILLE, NEW YORK.

IMPROVEMENT IN BALL-AND-SOCKET JOINTS.

Specification forming part of Letters Patent No. 142,293, dated August 26, 1873; application filed August 2, 1873.

To all whom it may concern:

Be it known that I, MILTON W. ST. JOHN, of Leonardsville, in the county of Madison and State of New York, have invented a new and valuable Improvement in Ball-and-Socket Joint; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my joint. Fig. 2 is a sectional view of the same. Figs. 3, 4, and 5 are details of the same.

This invention has relation to certain improvements upon my ball-and-socket joint for which Letters Patent No. 79,408 of the United States—dated June 30, 1868, antedated June 18, 1868—were granted to me; and it consists in the construction and novel arrangement of the enlarged lateral opening in the socket, the cover-flange of the concave bearing-plate, and the recessed cap for the reception of the rubber or spring, as hereinafter more fully described.

In the accompanying drawings, the letter A designates the ball formed on the end of the strap or bar B, the neck *a* of which is curved and passes laterally through an opening in the socket. B' represents the socket or cup formed upon the end of the plate C. This socket is laterally provided with a large opening, *b*, for the insertion of the ball A, said opening having at one side a contraction, *c*, of the proper diameter for the neck *a*. D indicates the concave bearing-plate against which the spring *d* acts. This plate is designed to be inserted into the socket through the opening *b* after the ball, and is provided with an exterior shield-flange, *e*, designed to cover said opening externally, and usually provided with a curved notch, *f*, for the neck *a* of the ball. The socket B' is internally threaded at its upper portion to engage with the exter-

nal thread of the inserted flange *g* of the cap E, which is provided with a shoulder, *h*, to meet the lip of the socket when the two parts are screwed closely together. The cap is recessed in the flanged or inserted portion for the reception of the rubber or spring F. By means of this recess *k* the spring is connected with the cap sufficiently to avoid loss in manipulating the parts of said spring, and to properly center the same for action on the concave bearing-plate. The socket B', although open at the side, is sufficiently strengthened at its open end by having a continuous lip, *l*, to admit of the insertion within it of the flange of the cap instead of locating said flange on the outside of the lip. The shield-flange *e* serves to lessen the opening *b* and to keep the socket properly closed without interfering with the movement of the concave plate. It also serves to keep the concave plate in proper position to prevent it from escaping from the socket through the opening *b*.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a ball-and-socket joint, the combination, with the spring, of the cap and its holding recess for connection with said spring, substantially as specified.

2. In combination with the socket B', open laterally and having the continuous lip *l*, the ball A, flanged concave D, and cap E, carrying the spring, substantially as specified.

3. The combination, in a ball-and-socket joint with the spring and concave bearing, of the socket and cap having a close joint between the lip and shoulder, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

MILTON W. ST. JOHN.

Witnesses:

JOS. B. LOOMIS,
GEORGE E. UPHAM.