(No Model.)

# W. WARE.

## OX BOW KEY.

No. 380,468. Patented Apr. 3, 1888.

*Fig. 1.*

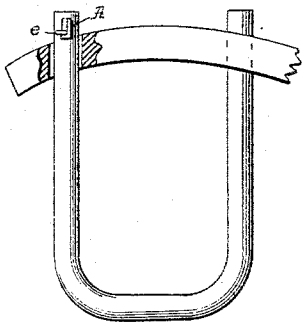



*Fig. 2.*

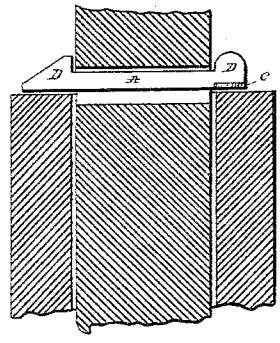



*Fig. 3.*

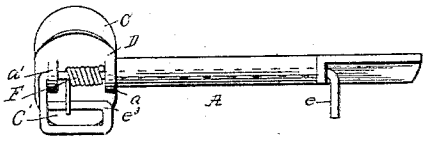



*Fig. 4.*

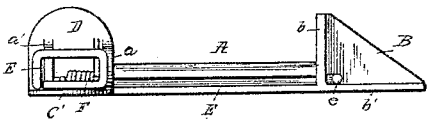



*Fig. 5.*

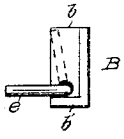
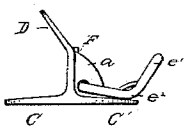



*Fig. 6.*




Witnesses.
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# UNITED STATES PATENT OFFICE.

WALTER WARE, OF CHANDLER, MINNESOTA.

## OX-BOW KEY.

SPECIFICATION forming part of Letters Patent No. 380,468, dated April 3, 1888.

Application filed January 19, 1888. Serial No. 261,285. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER WARE, a citizen of the United States, residing at Chandler, in the county of Murray and State of Minnesota, have invented certain new and useful Improvements in Ox-Bow Keys; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to ox-bow keys or bolts, and has for its object the construction of a bolt which will automatically lock itself in position against accidental displacement.

While the invention is chiefly designed for ox-bows, it is equally well adapted for any purpose where it is required to use a self-locking key or bolt.

The device is simple and compact and can be cheaply manufactured, as it is composed of three parts only, one being a spring, the other a lock-bar, and the third the bolt proper, which can be cast, the back bar being seated in a groove in the bolt-stock and journaled in a cross-bar and brackets at the ends of the bolt-stock, which will hereinafter more fully appear, reference being had to the accompanying drawings, in which—

Figure 1 is a front view of one end of an ox-yoke, parts being broken away, showing my improved key or bolt in position; Fig. 2, a cross-section on the line X X of Fig. 1, on an enlarged scale; Fig. 3, a top plan view of the key or bolt; Fig. 4, a side view of the bolt, and Figs. 5 and 6 end views of the bolt or key.

The bolt is composed of the body or stock A, of cast metal, having a slanting end, B, tapering to a point, and a flat head composed of lateral wings C and C′, arranged at right angles to the tapering end B. The thumb-piece and stop D, of a width corresponding to the width of the wings C and C′, projects at right angles from the wings and has its upper end deflected slightly to afford a firm purchase for the thumb, and in the angular space between it and the wing C′ are placed the brackets *a* and *a′*, which strengthen and brace the thumb-piece and form bearings for the lock and bolt.

The lock bolt E is journaled in the body or stock lengthwise thereof, and its ends extend and are bent up in the same direction at about right angles to its main or central portion. The end *e* is adapted to fold close to the end B of the bolt when inserting the bolt in position and stands at right angles to B when inserted to prevent the withdrawal of the bolt except by proper manipulation. The end *e′* is bent to form a loop, which is deflected at $e^2$ to stand at an angle to the wing C′ to permit the loop to be grasped readily when operating the lock-bolt. The inner end, $e^3$, of the loop is in line with the point of flection $e^2$ of the end *e′* and receives one end of the coil-spring F, which is placed on the lock-bolt and held between the brackets *a* and *a′*, the other end of the spring resting against the thumb-piece D.

The body of the bolt is grooved or channeled longitudinally to receive the lock-bar, and this groove is closed at one end by the bracket *a* and at the other end by the cross-bar *b*, which is extended and forms the base of the tapering end B. By this construction, having the stock A grooved, the bolt composed of the body A, end B, wings, thumb-piece, and brackets *a* and *a′* can be made of a single casting, and all that is necessary to finish it to receive the lock-bar is to bore the brackets and cross-bar *b*. The lock-bar, which is a stout piece of wire having the end *e′* bent to proper shape prior to its being placed in the bolt, is now inserted in the bolt and the end *e* bent, when the bolt is completed.

Of course it will be understood that the spring F is placed between the brackets and the lock-bar passed through it when slipping it to place in the bolt.

To lighten the bolt and at the same time give ample room for the end *e* to fold close, that portion of the end B between the cross-bar *b* and the extension *b′* is made very thin—in fact, is a web or fin of sufficient thickness to brace the cross-bar *b* and the extension *b′*, and at the same time guide the bolt in its passage through the mortise in the neck-yoke or other device to which the bolt may be applied.

In practice the bolt is grasped by the thumb-piece and loop of the lock-bar with sufficient pressure to overcome the tension of spring F. This brings the end *e* of the lock-bar in the

plane of the end B of the bolt. Now the bolt can be withdrawn or inserted in the mortise in the ox-bow. When inserted, the pressure is removed, and the lock-bar, being turned by the spring, holds the bolt in place.

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

1. The combination, with the bolt having a head and end portion of greater length than the diameter of the body of the bolt, of the lock-bar having the end corresponding with the end of the bolt bent at substantially right angles and adapted to stand at an angle to the said end of the bolt, substantially as and for the purpose described.

2. The combination, with the bolt having head and end portions extending beyond the sides of the body of the bolt, of the lock-bar journaled in the bolt lengthwise and having its end portion bent at right angles and adapted to fold in the plane of the end portion of the bolt and stand at an angle to the said end portion, substantially as and for the purpose described.

3. The combination, with the bolt having a tapering end, as B, of a lock-bar having an end, as *e*, adapted to fold close to the end and to stand at an angle thereto, substantially as and for the purpose described.

4. The combination, with the bolt-stock, the cross-bar *b*, the extension *b'*, and the web filling the angle between the cross-bar and the extension, of the lock-bar journaled at one end in the cross-bar and having its end adapted to fold close to the web, substantially as and for the purpose described.

5. The combination, with the bolt having a flattened head and the thumb-piece extending at an angle to the head, of the lock-bar having its end formed into a loop, substantially as and for the purpose described.

6. The combination, with the bolt having a flattened head, the thumb-piece, and the brackets located in the angle between the head and thumb-piece, as shown, of the lock-bar having its end bent to form a loop and the spring, substantially as and for the purpose specified.

7. The combination, with the bolt having a flattened head, the thumb-piece extending at right angles to the head and having its end deflected, and the brackets located in the angle between the thumb-piece and head, of the lock-bar having its end bent to form a loop, the loop being deflected, as set forth, and the spring mounted on the lock-bar and located between the brackets and having one end resting against the thumb-piece and the other end bearing on the loop, substantially as and for the purpose described.

8. The herein shown and described ox-bow bolt, composed of the stock longitudinally grooved, the tapering end, the flattened head, the thumb-piece standing at right angles to the head and having its end deflected, the brackets, the lock-bar having its ends bent at right angles, one end being bent to form a loop, which is deflected, as shown, and the spring placed on the lock-bar between the said brackets, one end of the spring bearing against the thumb-piece and the other end against the loop of the lock-bar, substantially as and for the purpose described.

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

WALTER WARE.

Witnesses:
J. B. BARLOW, Jr.,
HENRY HOYE.