F. B. Morse,
King Bolt.

No. 108,282. Patented Oct. 11, 1870.

Fig. 1.

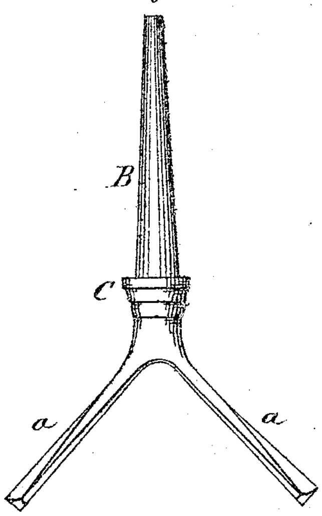

Fig. 2.

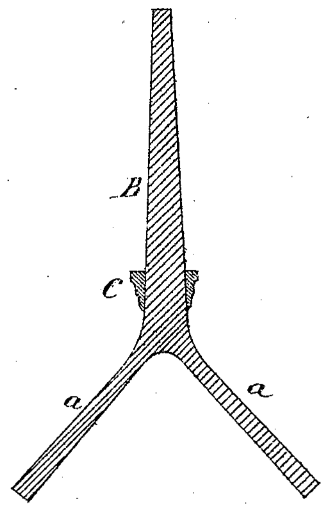

Fig. 3.

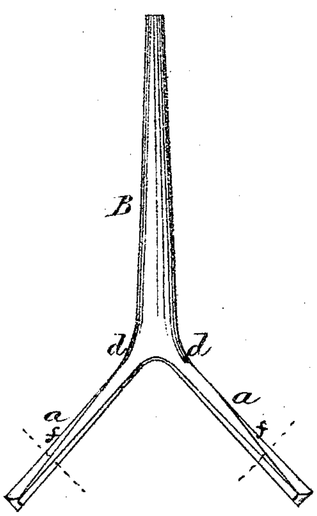

Fig. 4.

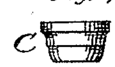

Fig. 5.

Witnesses.
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FRANCIS B. MORSE, OF PLANTSVILLE, CONNECTICUT.

Letters Patent No. 108,282, dated October 11, 1870.

IMPROVEMENT IN KING-BOLTS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, FRANCIS B. MORSE, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new improvement in King-Bolts; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents in—

Figure 1, a side view;

Figure 2, a central section;

Figure 3, a side view of the bolt without the collar; and in

Figure 4, the collar detached.

This invention relates to an improvement in the article of manufacture known to the trade as "king-bolts;" that is, the bolt which forms the pivot for the turning of the forward axle.

In king-bolts as heretofore manufactured, it has been necessary to form a collar on the bolt, at a little distance above the end of the clip, for the reason that, in the process of forging, it was difficult, if not impossible, to make the bolt as full or large at the base of the bolt, where it joins the clip, as at a short distance above, a portion of the metal of the bolt being taken away in finishing the base or neck; but the employment of the V-shaped dies for which a patent was granted to me February 22, 1870, the base or neck of the bolt may be made full, and so as to be of regular taper, or diminishing in diameter from the base up.

In the employment of a collar a difficulty exists, which arises from the fact that the constant wear upon the fifth wheel, in consequence of its large diameter, is much greater than that on the bolt; consequently, after a little use, the bearing comes on the bolt, and is so far taken from the fifth wheel as to make the bearing unsteady; that is, to tip to one side or the other on the bolt.

The collar is only necessary where the neck of the bolt is contracted or made smaller, as I have before referred to, for when the bolt can be made of an increasing diameter from the point to the upper end of the base, and its bearing made accordingly, the wear of the fifth wheel will let the bearing down on the bolt, insuring always a constant fit.

The first part of my invention consists in the construction of the bolt with branches or parts of the clip formed thereon, the bolt of an increased diameter from the intersection of the clip toward the point.

In the employment of a collar or shoulder on the bolt, it must be cut or fitted so as to correspond to the fifth wheel.

To thus fit the collar, when formed upon the bolt, as was formerly the custom, the bolt must be set upon the axle and the parts set together, then removed and turned on until the exact height is attained.

To avoid this difficulty in adjustment, I have heretofore fitted the collar so as to screw onto the base or neck of the bolt, as seen in the patent granted to me February 23, 1869, for king-bolts; but the cutting of the thread and tapping of the bolt does not avoid the necessary removal of the collar for adjustment.

To avoid this difficulty is the second part of my invention, which consists in combining with a king-bolt, made tapering, or of an increasing diameter toward the base, a collar of ductile metal, as brass, bored out to correspond to the taper of the bolt, and so as to be driven down onto the bolt until the required adjustment is attained, the ductility of the metal allowing it to be so driven.

Previous to the V-shaped dies, to which I have before referred, the ends of the clip were left in the rough and not blanked in any portion, the consumer having been required to forge and work the parts into shape. By those dies I form the face of the clip, as in figs. 4 and 5, so that up to the broken line the clip is finished, and the consumer has only to round the end from that point to receive the bolt, the dying out of the bolt from the clip, so as to form a neat and tasteful finish, being produced in the dies.

B is the bolt.

a a, the two parts of the clip, as seen in fig. 3, being an extension of the bolt.

By the process of forging by means of the V-shaped dies, before referred to, the neck or base at *d* is enlarged, and from thence toward the point, of a continuous taper or diminishing diameter, as denoted in the drawing.

This bolt is applied in the usual manner, and the bearing to receive it made of a corresponding form, so that a perfect fit is always insured, and the strongest part of the bolt is at the base, the point of its greatest strain, which, previous to my invention, has been of smaller diameter, necessarily so made in forming the neck.

In such bolts, if it is desired to use a collar, and also in bolts of common construction where a collar is required, I construct a collar, C, of any suitable ductile metal, as brass, and bore it out corresponding to the taper of the bolt, and of the diameter of the bolt at the highest possible point it may ever be required on the bolt. Then the consumer, placing the collar upon the bolt, and the bolt, fifth wheel and parts together, drives the collar down onto the bolt until the required height or adjustment is attained,

the ductility of the metal allowing the collar to be so driven.

The arms *a* of the clip are, by the dies before referred to, forged into shape, as seen in figs. 4 and 5, the outer surface being finished; the tapering part or raised surface above the broken line represents the continuation of the end of the clip, when forged to receive the clip-bar and nut, and the consumer has only to heat the tip end of the arms, and in suitable dies strike that portion below the broken line into form to receive the clip-bar and nuts, avoiding the finishing of the surface, as heretofore required.

I claim as my invention—

1. The king-bolt B, with the clip-arms *a*, when the said bolt is of a decreasing diameter from its intersection with the clip-arms toward the point, substantially as set forth.

2. In combination with the bolt B, the collar C, of suitable metal, so that the collar may be forced on the bolt for the purpose of adjustment, the metal yielding for such purpose, substantially in the manner and for the purpose set forth.

F. B. MORSE.

Witnesses:

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