

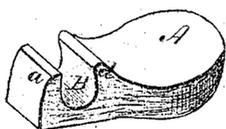
*F. B. Morse,*

*Forging Carriage Shackles.*

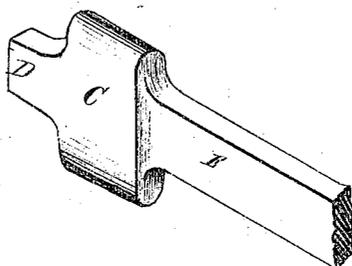
*No. 106,190.*

*Patented Aug. 9, 1870.*

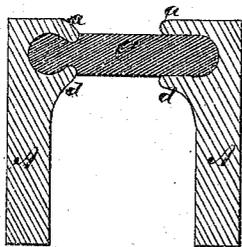
*Fig. 1.*



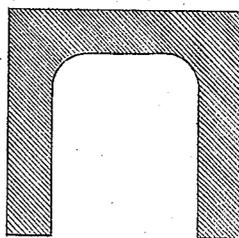
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



*Witness.*  
*J. N. Shumway*  
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# UNITED STATES PATENT OFFICE.

FRANCIS B. MORSE, OF PLANTSVILLE, CONNECTICUT.

## IMPROVED PROCESS OF FORGING CARRIAGE-SHACKLES.

Specification forming part of Letters Patent No. **106,190**, dated August 9, 1870.

*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 Processes for Forging Carriage-Shackles; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a perspective view of one of the ears; Fig. 2, a perspective view of the base; and in Fig. 3 the manner of securing the ears to the base preparatory to welding.

This invention relates to an improvement in the process of forging carriage-shackles.

Various devices have been conceived for constructing a shackle so as to present a square corner upon the outside and a curved or braced corner upon the inside, the most successful of which have been by forging the shackle from a solid piece, or by welding a piece across the base in the form of a T, then bending up the ears. The first necessitates the use of a large piece of metal at that part where the ears are formed, while the remaining portions are slight. The difficulty of this process consists in the fact that heating the large mass to a sufficient degree of heat is liable to burn the lighter portions, and to the last-named process bending the ears strains and weakens the material.

By my invention these difficulties are entirely overcome; and it consists in forming the ears so as to be temporarily set on or attached to each side of a base and held in that position until the whole can be heated, and then, by suitable dies, welded.

A is one ear, the two for each shackle being substantially alike. Upon the lower edge I form a groove, B, with a slight lip, *a* and *d*, upon each side. C is the base, drawn out at the ends D and E to form the usual projections for attachment to the axle and shaft. The groove B in the ear corresponds to the thickness of the base C, and the ears are each set onto the base, as denoted at the right hand of Fig. 3; then placed in a suitable die. The lips *a* and *d* are struck so as to be embedded into the base, as denoted at the left hand, Fig. 3, which secures the ears to the base sufficiently strong to hold them in position and be placed in the fire, and when heated the base, with the ears, is set into a suitable die, constructed for the purpose, which strikes and welds the ears solidly to the base, producing a perfect square corner upon the outside and a rounded or braced corner upon the inside, as seen in Fig. 4; and I produce a most perfect shackle at a greatly reduced expense from the process heretofore employed.

I claim as my invention—

The process herein-described for forging carriage-shackles, consisting in constructing the several parts of the form substantially as described, and temporarily attaching the two ears to the base by inserting the ends of the base C in the grooves of the ears and then swaging the lips *a d* down into the base C, as shown, so as to be locked onto the base preparatory to welding, substantially as set forth.

F. B. MORSE.

Witnesses:

JOHN H. SHUMWAY,  
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