

W. S. WARD.

Machines for Forming Carriage Clips.

No. 137,517.

Patented April 1, 1873.

fig. 1

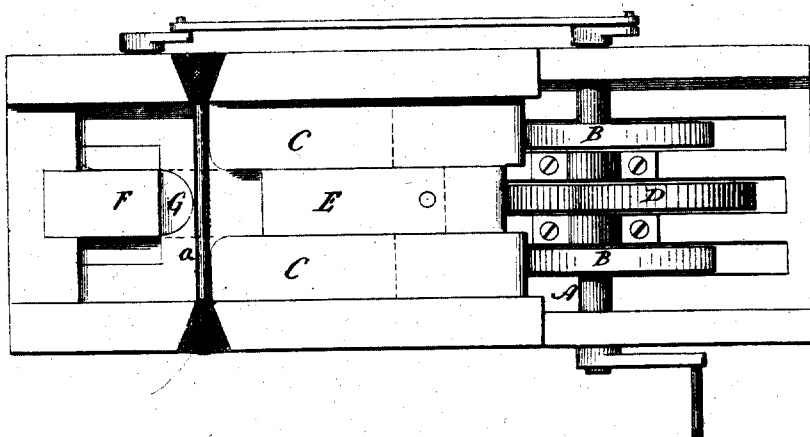


fig. 2

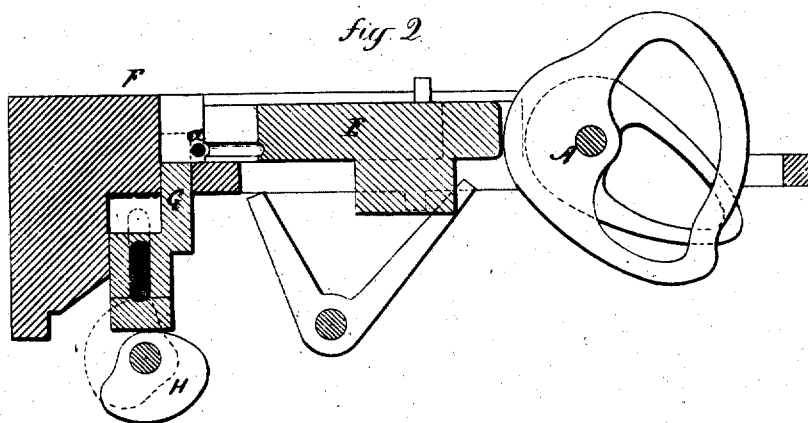


fig. 4

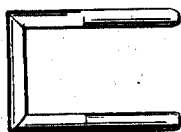
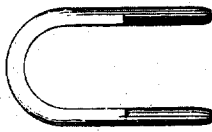


fig. 3



Witnesses

W. Shumway
A. J. Tibbets

Wm. S. Ward

Inventor

By Atty.

Sam. Earle

UNITED STATES PATENT OFFICE.

WILLIAM S. WARD, OF PLANTSVILLE, CONNECTICUT, ASSIGNOR TO H. D. SMITH & CO., OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR FORMING CARRIAGE-CLIPS.

Specification forming part of Letters Patent No. **137,517**, dated April 1, 1873; application filed February 12, 1873.

To all whom it may concern:

Be it known that I, WILLIAM S. WARD, of Plantsville, in the county of Hartford and State of Connecticut, have invented a new Improvement in Machine for Forming Carriage-Clips; 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 top view; Fig. 2, a longitudinal section; Fig. 3, a partially-formed clip; and in Fig. 4, the completed clip.

This invention relates to a machine for forming that class of clips in which the sides or legs are turned at a right angle from the top, the object being to perfectly form the angles; and the invention consists in an auxiliary former which is presented in front of the blank, of a semicircular or curved shape, combined with a pair of jaws which bend the two legs down around the said former; then the said former is withdrawn, and a follower working between the said jaws forces the curved part of the blank down onto the flat surface, the difference in length between the curved form and the straight affording sufficient metal for the perfect formation of the angles.

On a supporting-bed the driving-shaft A is arranged, to which power is applied in any desirable manner. On this shaft are arranged a pair of cams, B B, each operating a slide, C, which is suitably guided, a third cam, D, operating a central follower, E. Forward of this follower the principal former F is set, the width of this former corresponding to the width between the legs of the clip to be formed, the head or face of the former being flat and at right angles to the sides. G is the auxil-

iary former, which has a vertical movement imparted to it by a cam, H, to raise the auxiliary former up in front of the principal former; as denoted in broken lines, Fig. 2. The face of the auxiliary former is semicircular or curved, as seen in Fig. 1—that is, the face of the auxiliary former is longer than the face of the principal former.

The blank *a* is passed in front of the former, and the follower E, by the turning of the shaft A, is driven forward so as to clamp the blank upon the face of the former G; then the two jaws C come forward and bend the ends down around the former, producing substantially the form shown in Fig. 3. The jaws C firmly hold the two legs one upon each side of the former F; the former G drops; the follower E is then forced forward, compressing the curved part of the blank down upon the flat face of the former F; the shape required for the upper side of the clip is made in the end of the follower.

As the length of the bent portion of the blank is greater than the width of the former F it follows that the forcing of this bent portion down into a straight line will throw a surplus of metal to the angles where it is required to form the external right angles, as seen in Fig. 4. After the blank has been thus formed the parts resume their former position for operation upon a second blank.

I claim as my invention—

In combination with the principal former F and auxiliary former G, the two jaws C and a follower, E, constructed and operated together substantially as and for the purpose specified.

WILLIAM S. WARD.

Witnesses:

A. J. TIBBITS,
J. H. SHUMWAY.