WILSON NOBLE.

IMPROVEMENT IN THE MANUFACTURE OF CARRIAGE CLIPS.

116345

FIG. 1

PATENTED JUN 27 1871

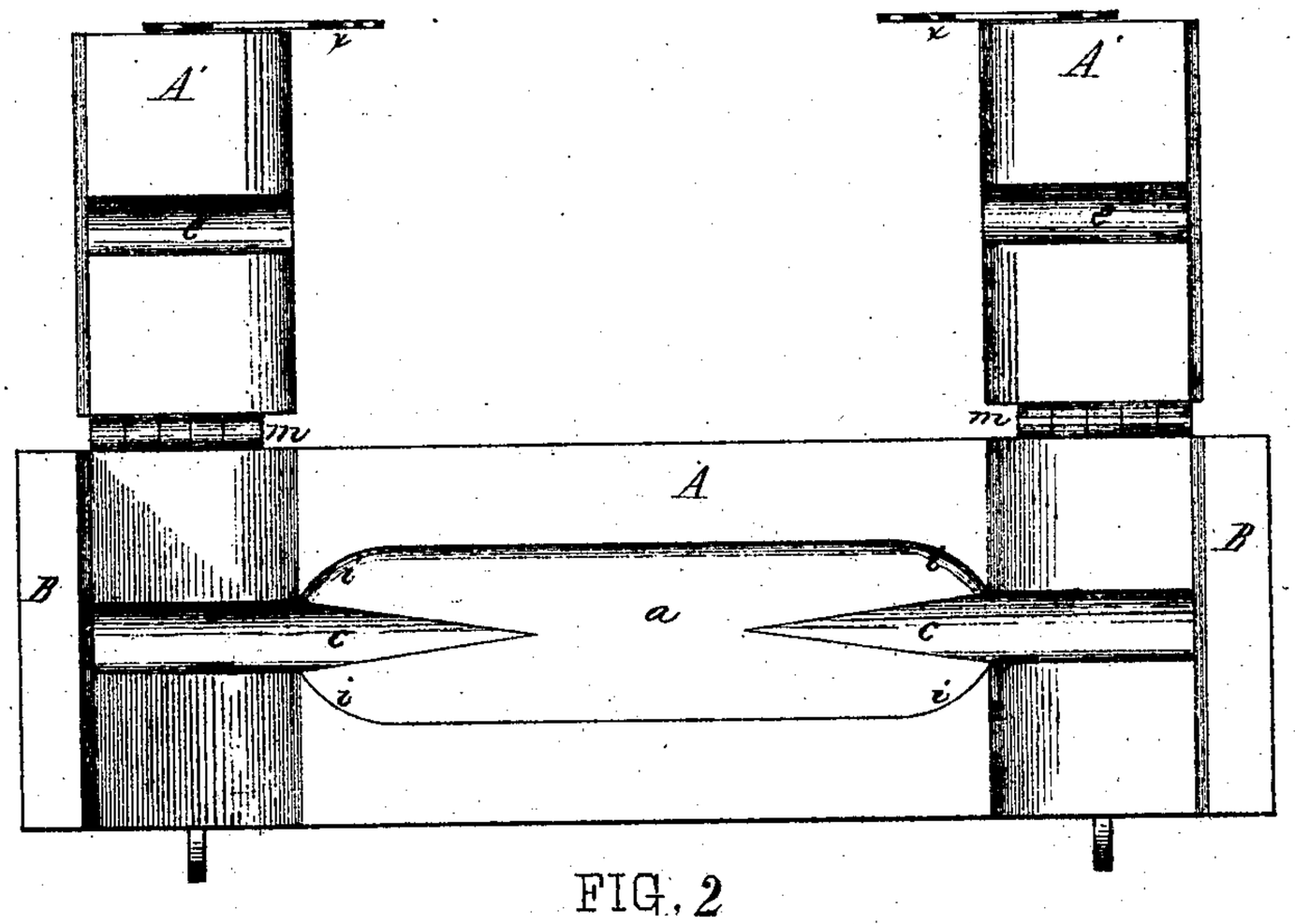


FIG. 2

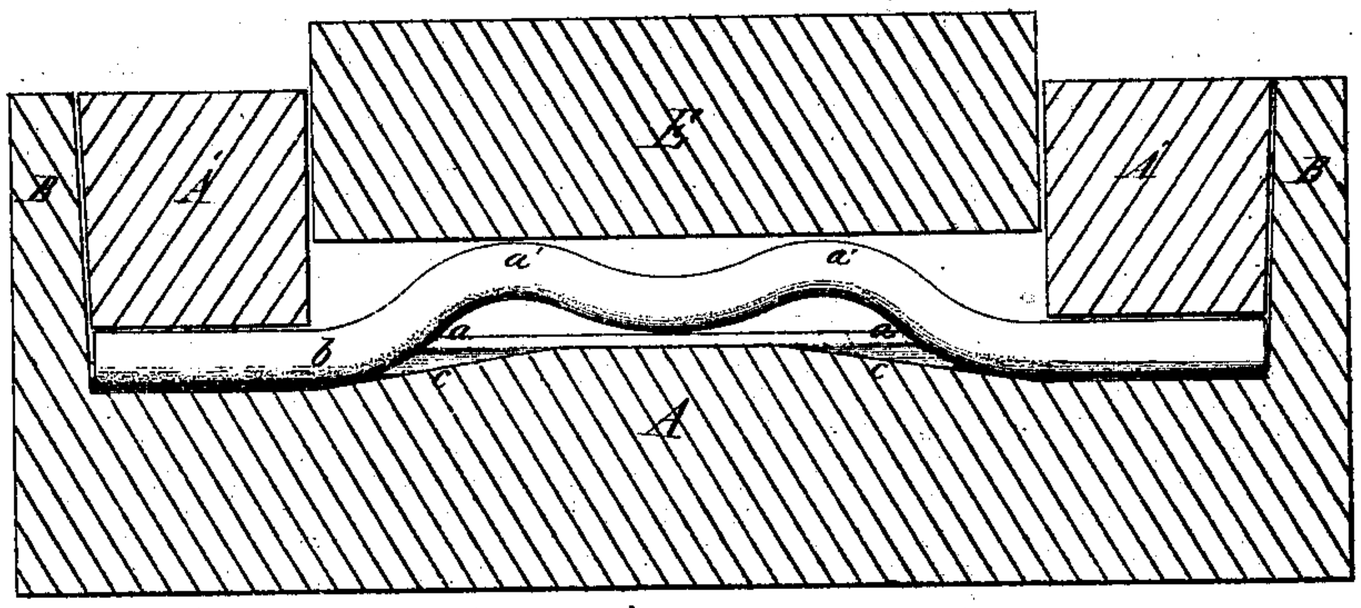
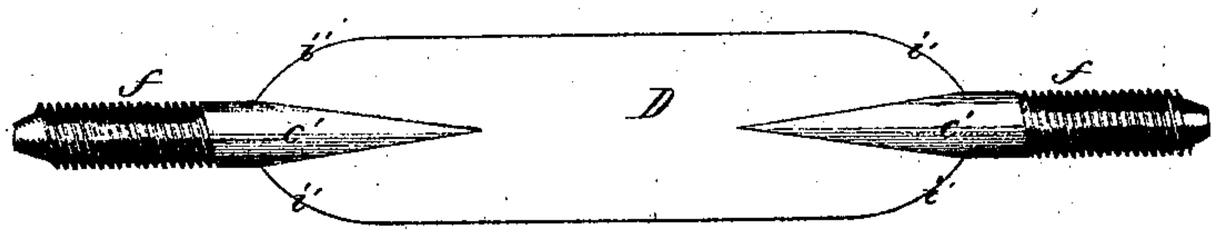


FIG. 3



Witnesses,
Clarence Buckland.
Samuel E Howard

Wilson Noble, Inventor,
By T. A. Curtis, his Atty.

UNITED STATES PATENT OFFICE.

WILSON NOBLE, OF DERBY, CONNECTICUT.

IMPROVEMENT IN DIES FOR MAKING CARRIAGE-CLIPS.

Specification forming part of Letters Patent No. 116,345, dated June 27, 1871.

To all whom it may concern:

Be it known that I, WILSON NOBLE, of Derby, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in the Manufacture of Carriage-Clips; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification and to the letters of reference marked thereon, in which—

Figure 1 is a plan view of a die in which a clip is made by my process. Fig. 2 is a longitudinal vertical section of the same, with a blank placed therein in position to be forged, and also showing the forging-die as applied to the blank; and Fig. 3 represents a clip as forged by my process with the screw-threads for the nuts cut upon each end.

My invention relates to an improved process in the manufacture of carriage-clips, whereby the same are forged directly from a round rod of iron or steel without the previous process of forging out the blanks from which the clips are afterward manufactured; and it consists of a counter-die or mold, having an imprint of the clip therein, at each end of which is an abutment. Upon one side of the counter-die are hinged two clamps, one at each end, and the die itself is plane or flat upon its lower side, and is made to fit properly in between the two end clamps, and it also fits well the upper surface of the counter-die or mold. The blank from which the clip is forged is of proper-sized round iron or steel, and, when heated and placed upon the counter-die, two other pieces are laid transversely across the counter-die, so that when the heated blank is laid in lengthwise between the abutments, and pressed down upon the mold, two crooks or curves are given to the blank by the contact of the latter with the two pieces laid crosswise the mold, said blank being pressed down at each end and in the middle. The two transversely-laid pieces are then withdrawn. The flat die being then forced down upon the blank, the metal, at the points where the crooks are made, is forced along lengthwise toward each end of the blank sufficiently to form the strengthening-bead, and also to fill out the rounded ends of the flat portion of the blank.

That others skilled in the art may be able to make and use my invention, I will proceed to describe the same.

In the drawing, A represents a metallic block, having upon the upper side a form or mold, *a c*, of the required form of the clip, the recessed part *a* being of sufficient depth to give the required thickness to the band; and the mold is further recessed at *c* to form the bead, which gives the necessary strength at the point where the ends *f* are joined to the flat part D. An abutment, B, is made upon each end of the mold or counter-die; and at *m* are hinged two clamps, A′, one at each end, each having a recess, *e*, therein, to approximately fit the blank at the ends, and each clamp may be closed and secured, by the hooks *x*, to fastenings in the counter-die. E represents the die, which is merely a flat piece of sufficiently-hardened metal, plane or flat upon its lower side, and made to fit properly between the clamps A′, and also to fit the upper surface of the counter-die. The blank *b*, which is of round iron, is cut of sufficient length to contain the necessary metal, and, being heated sufficiently, the blank is pressed down upon the counter-die by pressure applied at the middle, and the clamps A′ applied at each end, two pins having been previously laid transversely across the counter-die, at points immediately beneath the crooks *a′*, as indicated by the dotted lines in Fig. 2, so that, by pressing down the blank by the pressure applied in the middle and at both ends, the heated iron is made to bend by coming in contact with the pins. If the pins are then withdrawn, and the die E be forced down upon the heated blank, the metal, at the points where the crooks *a′* are made, is forced out longitudinally along the blank toward each end sufficient to fill the recessed parts *c′* and form the strengthening-bead *c′* near each end, and also to fill out fully the rounded ends *i′* of the flat part D.

It might be better to make the abutments B inclined from a perpendicular, upon the inside, so that they would be furthest apart at the top, and, by cutting the blanks from round iron of that length, and forcing the blanks down to the form or counter-die, the ends would have a tendency to be crowded in, and the crooks made of the proper length somewhat easier than if the sides of the abutments were perpendicular.

By this process I am enabled to use a rod of uniform size for the blanks, and of the same size as the ends *f*, upon which are made the screw-threads; whereas, otherwise, larger iron would be

required, and previously forged into proper shape for the blanks, in order to bring the larger quantity of metal into the places where it is required.

I am aware that various dies and forms have been heretofore used in the manufacture of various similar articles, and I do not claim the die, nor any part thereof, except as it is used in the process of forming the clip from a crooked blank, as hereinbefore described.

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

The process of forming a carriage-clip from a blank or bar of metal, *b*, of uniform size, by first forming the crooks *a'* and then the ends of the blanks, being confined by the clamps A', and abutments B pressing said blank down into the die A and imparting to it the form *a c* by means of the die E, substantially as described.

WILSON NOBLE.

Witnesses:
F. A. CURTIS,
CLARENCE BUCKLAND.