

F. VAN PATTEN.

Dies for Swaging Clip King-Bolt Blanks.

No. 141,681.

Patented August 12, 1873.

Fig 1

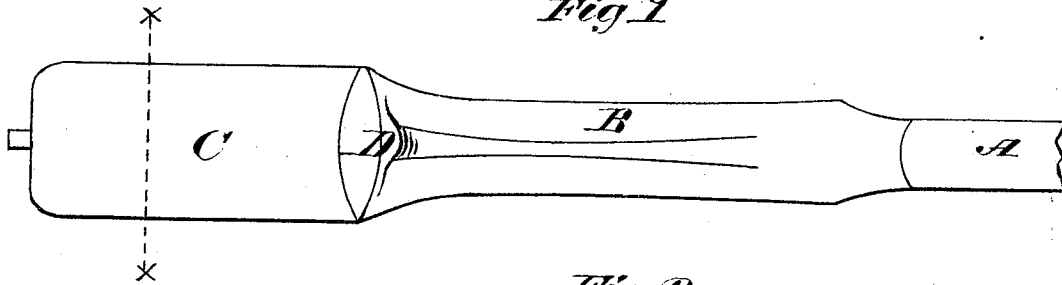


Fig. 2

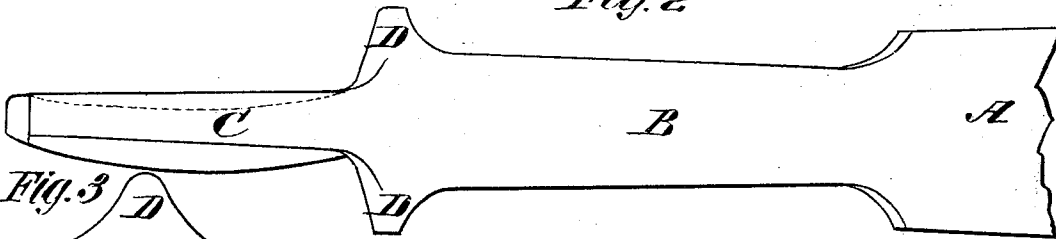


Fig. 3

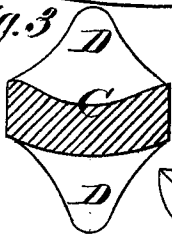
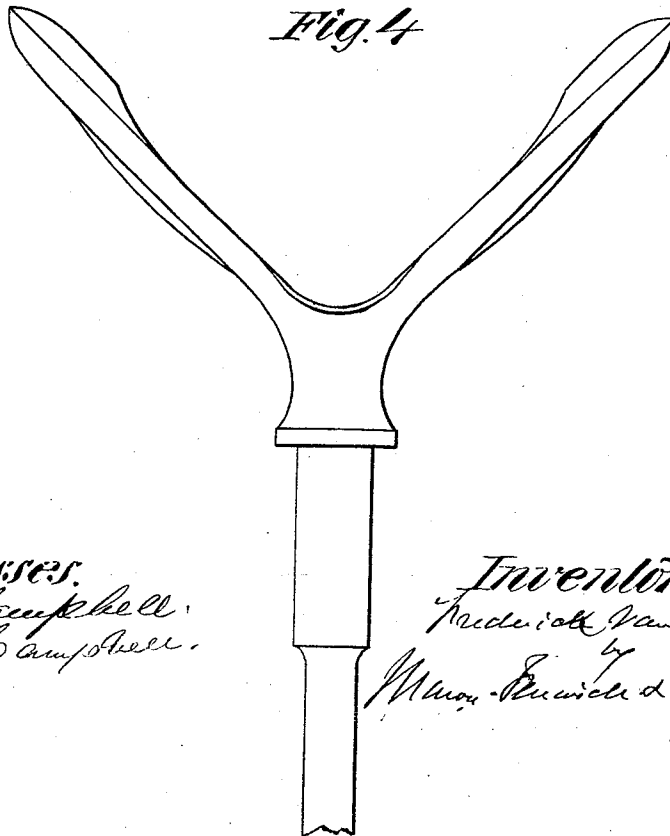


Fig. 4



Witnesses.
R. V. Campbell.
J. N. Campbell.

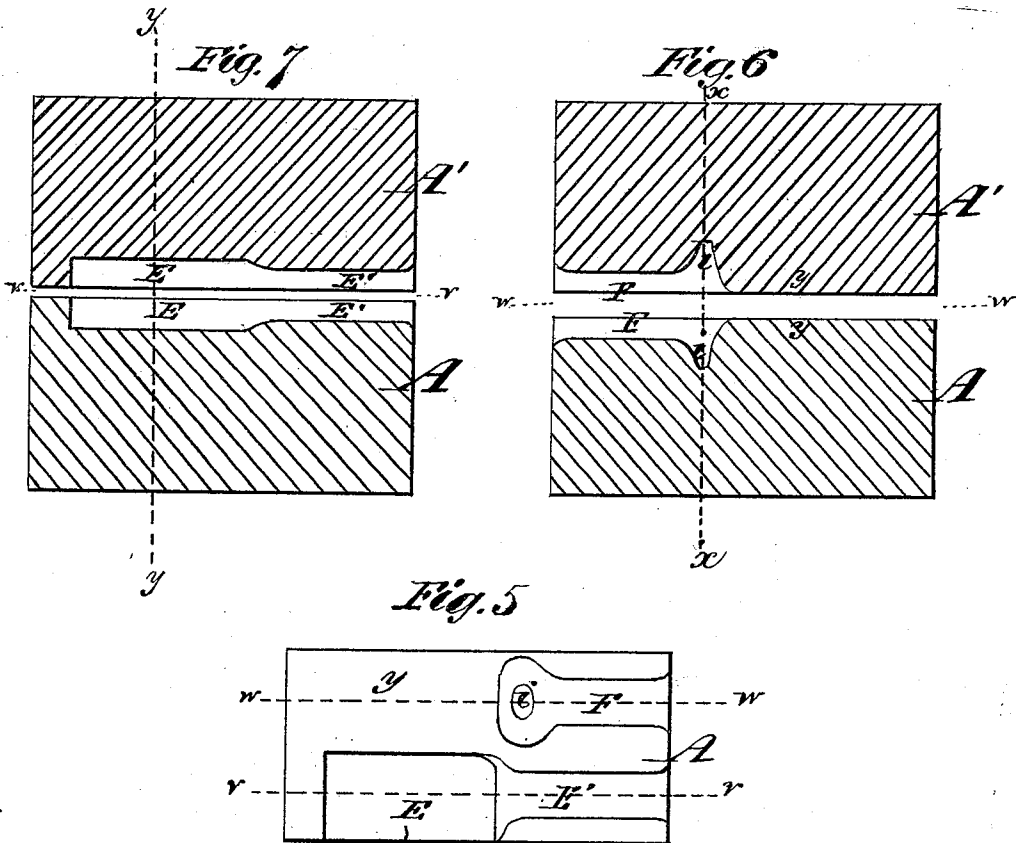
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Fig 8

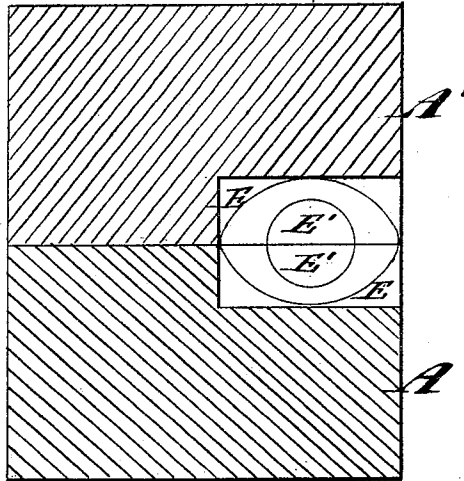
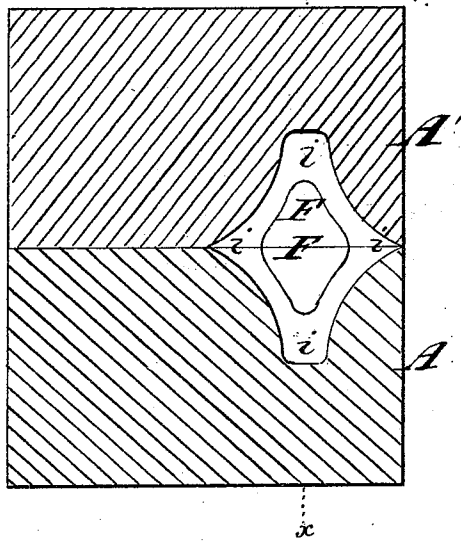


Fig 9



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Fig: 10.

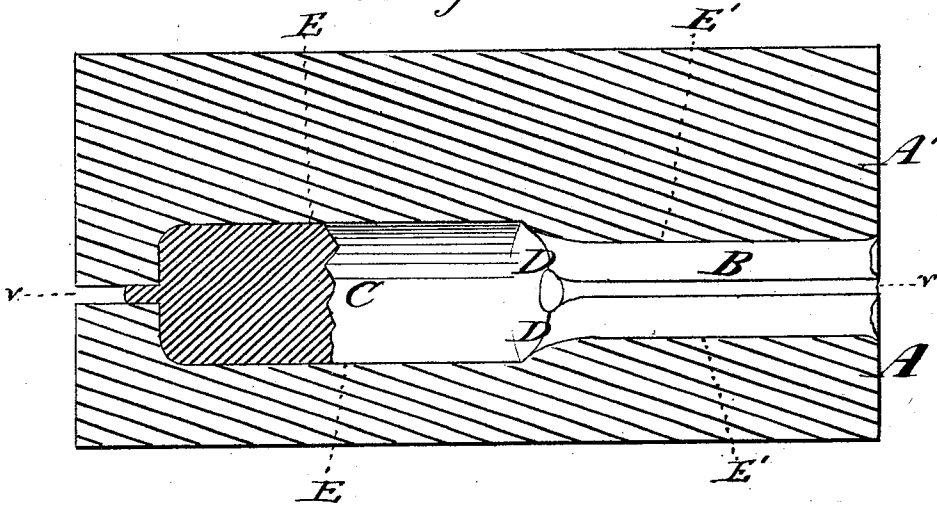
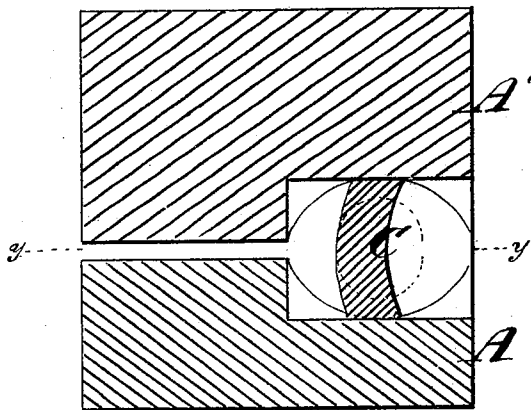


Fig: 11.



Witnesses

R. H. Campbell
J. H. Campbell

Inventor.

Frederick Van Patten
by *Mason Churick Lawrence*

UNITED STATES PATENT OFFICE.

FREDERICK VAN PATTEN, OF AUBURN, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HIMSELF AND E. D. CLAPP, OF SAME PLACE.

IMPROVEMENT IN DIES FOR SWAGING CLIP KING-BOLT BLANKS.

Specification forming part of Letters Patent No. 141,681, dated August 12, 1873; application filed February 28, 1873.

B.

To all whom it may concern:

Be it known that I, FREDERICK VAN PATTEN, of Auburn, in the county of Cayuga and State of New York, have invented new and useful Improvements in Dies and Blanks for Making Clip King-Bolts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figures 1, 2, 3, Plate 1, are views of the blank produced by my dies. Fig. 4, Plate 1, is a view of a clip king-bolt partly made, and which is subsequently produced from the blank represented. Fig. 5 is a top view, showing, in plan, one-half of the two dies used in making the blank. Figs. 6 and 9, Plates 2 and 3, show a longitudinal and a transverse section of the die which produces the first impression upon the piece of metal out of which the blank is formed; and Figs. 7 and 8 show the same views of the die which makes the second or last impression upon said piece of metal; and Figs. 10 and 11 show the same views of the same die with the said piece of metal in it, and as it appears after the last impression has been made upon it.

My dies are designed to make a blank which will, when subjected to the action of other dies with which it may be treated in the process of making a clip king-bolt, fill the chambers of such dies completely, and afford just enough surplus metal to be spread out into fins or webs, which may afterward be readily trimmed off.

In the accompanying drawings, A A' represent upper and lower die-blocks. In the upper surface of the lower and the under surface of the upper block a recess or die, F f, of the contour shown in Figs. 5, 6, and 9, is formed. The remaining portion, y y, of the surfaces of the die-block are left flat. This die, when a flat-sided bar of metal, wider than it is thick, is placed edgewise between its upper and lower halves, swages said bar into the form shown at B, C, and D, Figs. 1, 2, and 3 of Plate 1, excepting that the concavo-convex portion at C is left with flat sides.

It will be seen that the metal of the bar is mashed down and spread out laterally to form

the broad flat portion C behind the wings D D; and that it is spread out laterally in front of the said wings, to a less degree, to form the elliptical or partially-rounded portion B. This mode of swaging the bar of metal obviates the necessity of forging out the wings, they being left upon the bar by reason of the swaging action of the dies only coming in rear and in front of that portion of the metal of which they are formed.

The next operation is to bulge the flat portion C of the bar; and to do this in recesses formed in the lower die-block A and upper die-block A', or in independent blocks, as may be deemed best, a die-recess, E E', is formed, that portion of the recess lettered E' corresponding in form with that portion of the recess F f which forms the front surface of the wings D D and the stem B. The other portion of the recess in each of the die-blocks is flat-sided, except the corners, and nearly deep enough to form together a chamber, which will admit the flat portion C of the bar edgewise between the two halves of the die when the rounded part of the die is fitted between the recessed portions E E', as illustrated in Figs. 10 and 11 of the drawings. The recesses E E are also wide enough to permit the bulging out of the portion C of the metal bar when the upper die is brought down upon the lower one.

It will be seen that as the wings D D shoulder against the front end of the recessed portions E E of the die-block, and the extremity of the flat portion C abuts against the rear shoulder formed by the recessing of the blocks, and that the bar is thus held between firm abutments, a heavy pressure of the upper die-block upon the edge of the flat portion C of the metal bar will cause it to take a concavo-convex or bulging form, as represented in Figs. 2, 3, and 11. It is by this mode of procedure that the metal is bulged out into the form shown. I have sometimes produced the bulge by swaging with a convex male and a concave female die; but I prefer the plan shown and described.

The advantages of my invention are that I can produce these blanks very expeditiously, and without upsetting the metal for the wings D D; and when thus produced they are in the

very best form and condition for subsequent reduction to the final shape of the article shown in Fig. 4, for the reason that the metal is so disposed in the blanks that the dies will be completely filled with certainty, and without liability of breaking or cracking the stock, the concavo-convex portion insuring this in the die which forms the clip portion of the king-bolt, and also insuring a perfect division of metal in the die on each side of the center of the stem of the king-bolt.

In a subsequent operation upon the blank the part C is made to form tines or horns, the parts D D wings or lips, and the part B a cylindrical stem, as illustrated in Fig. 4.

I do not confine myself to the exact form or shape of recesses, as the form may be varied to suit the necessity of the case without departing from my invention.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A die, F *i y*, for forging a bar of metal into a blank for a clip king-bolt, substantially as described.

2. A die, E E', for holding and bulging the part C of the blank, substantially as described.

3. The combination of the die F *i* with the die E E', substantially as described.

4. The adaptation of part C of the blank to dies in which it is to be subsequently struck up, and so as to insure the filling out of the corners, with the least possible surplus of metal, by reducing it to the concavo-convex or bulging form described and shown.

FREDERICK VAN PATTEN.

Witnesses:

HORACE T. COOK,
C. M. FITCH.