

(Model.)

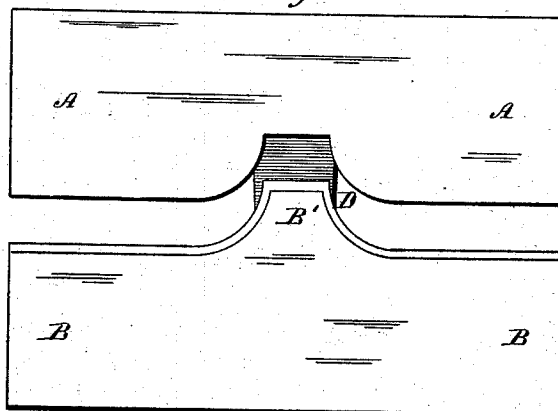
2 Sheets—Sheet 1.

H. HAMMOND.  
DIE FOR FORGING HAMMERS.

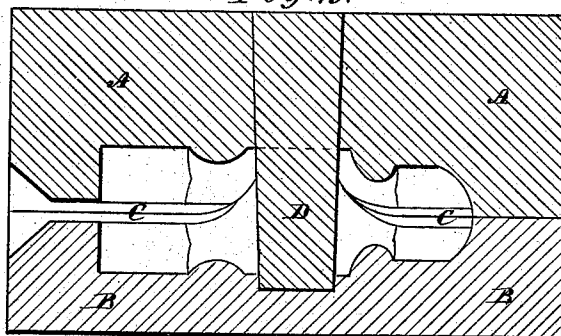
No. 295,547.

Patented Mar. 25, 1884.

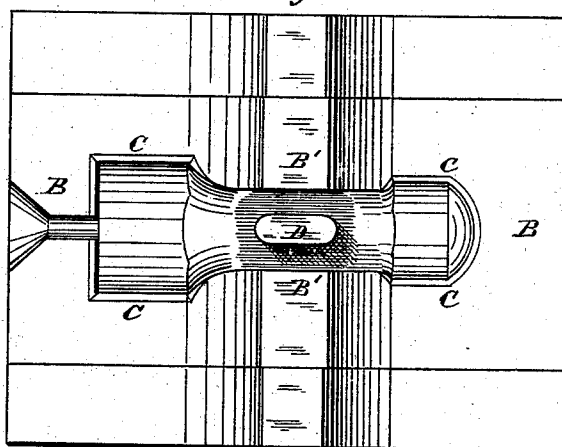
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Witnesses.

Charles T. Bondett.  
Edwin F. Nimock.

Inventor.

Henry Hammond  
by Theo. S. Ellis, Attorney

(Model.)

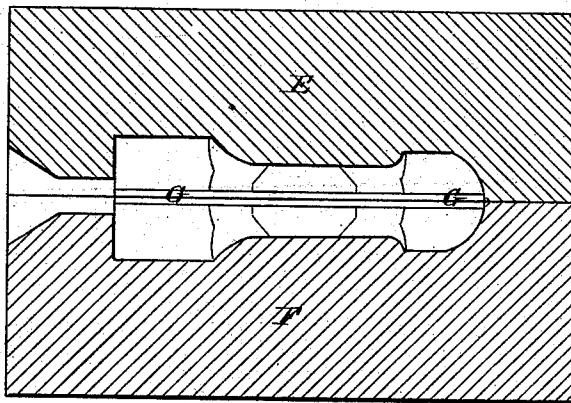
2 Sheets—Sheet 2.

H. HAMMOND.  
DIE FOR FORGING HAMMERS.

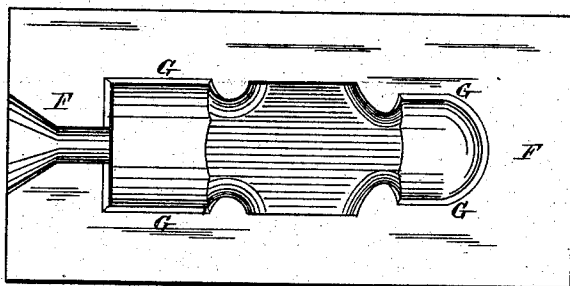
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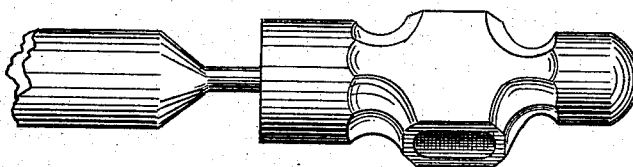
*Fig. 4.*



*Fig. 5.*



*Fig. 6.*



Witnesses.

Chas. L. Burdett.  
Edwin F. Nimock.

Inventor.

Henry Hammond  
by Theo. G. Davis, Attorney

# UNITED STATES PATENT OFFICE.

HENRY HAMMOND, OF HARTFORD, CONNECTICUT.

## DIE FOR FORGING HAMMERS.

SPECIFICATION forming part of Letters Patent No. 295,547, dated March 25, 1884.

Application filed June 13, 1881. Renewed October 1, 1883. (Model.)

*To all whom it may concern:*

Be it known that I, HENRY HAMMOND, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Dies for Forging Hammers; and I do hereby declare that the following is a full, clear, and exact description thereof, whereby a person skilled in the art can make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Like letters in the figures indicate the same parts.

My improvements relate to dies for forging hammers, and more especially to those which are used in finishing and giving to the hammer its final shape and form.

The object of my invention is to finish the hammer without leaving upon it a web where the parts of the die join, and which in the customary form of finishing-dies has to be sheared or ground off, so that the hammer as it comes from the dies is smooth and perfect. This is accomplished by the peculiar form and construction of my improved dies.

In the accompanying drawings, on two sheets, illustrating my invention, Figure 1 is a side view of what I shall call "die No. 1," with the two parts slightly separated, so as to show the construction. Fig. 2 is a vertical section through the middle of the same die. Fig. 3 is a top view of the lower part of the same die. Fig. 4 is a vertical section of another die, which I shall call "die No. 2." Fig. 5 is a top view of the lower part of die No. 2, or a bottom view of the top part, both being alike, or rather symmetrical. Fig. 6 is a perspective view of the finished hammer as it leaves the dies, having the sprue attached, which is cut off when it becomes unnecessary for use in handling the hammer.

The two dies, or, as they are sometimes called, "two pair of dies," are used conjointly, the hammer being placed alternately in them and pressed or struck in the customary manner.

A and B are the upper and lower parts of die No. 1. The peculiar features of this die are that the division-line upon which the parts separate does not follow the middle of the hammer. It follows the middle of the circular part at the ends, and then curves upward, so that

at the eye of the hammer the division is at the top, as shown in Figs. 1 and 2, and also that the joint between the two parts toward the ends of the hammer are freed, so as to allow the metal to spread somewhat without forming the thin web in the space between the two parts of the die, as is commonly the case. This freed portion is shown at C in Fig. 2.

D is a mandrel inserted into and forming part of the upper part of the die, and which extends downward to the bottom of the lower part of the die. It is made taper, and is commonly slightly chamfered at the end, to facilitate its entrance into the hole already formed in the hammer by the previous processes through which it has passed. This mandrel, in being forced into the hole in the hammer, slightly enlarges it and presses the metal against the sides of the lower part of the die at B, which serves as a buttress to resist the spreading in that direction, so that the extra metal is forced into the ends of the hammer. The two parts coming together, therefore, crowds the metal into the sprue and into the freed portions C.

E and F are the upper and lower parts of die No. 2. In this die the hammer, it will be observed, lies in a position at right angles to that of die No. 1—that is, it is turned one-quarter way round, so that the division-line comes upon another part of the hammer. The peculiarity of this die is that it has no mandrel for the hole, and that it has a freed portion, G, extending all around the joint where the two parts of the die unite, this joint being straight, as is now commonly seen in such dies. This die acts upon that part of the hammer which comes opposite the freed parts of the first die, and forces the metal back into shape, thus crowding any extra material back toward the sprue.

It will be observed that, owing to the shape of the line upon which the first die is divided, no part of the metal opposite the hole is pressed in by these second parts, the freed portion of die No. 1 not extending across the eye part of the hammer. The hammer is pressed in these two dies alternately and the operation repeated until the hammer is forged into exact shape without leaving upon it any swell or web where the parts of the dies join.

By means of my invention a great amount of

labor in removing the ordinary web and finishing is avoided.

What I claim as my invention is—

- 5 1. The finishing-die A B, having the joint between the upper and lower parts of the form shown and described, whereby the line of junction passes along the middle portion of the ends of the hammer, and thence curves outward to the top of the eye, substantially as described.
- 10 2. In a finishing-die for hammers, of the form shown and described, the combination of the mandrel D upon one part of the die with the

buttresses B' upon the other part, both extending the full length of the eye, substantially as described.

- 15 3. The die A B, of the form shown and described, having the freed portions C jointly with the die E F, of the form shown and described, having the freed portions G at right angles to those at C, substantially as set forth.

HENRY HAMMOND.

Witnesses:

THEO. G. ELLIS,  
EDWIN F. DIMOCK.