

T. DAFFIN.

Dies for Forging Hammers.

No. 143,406.

Patented Oct. 7, 1873.

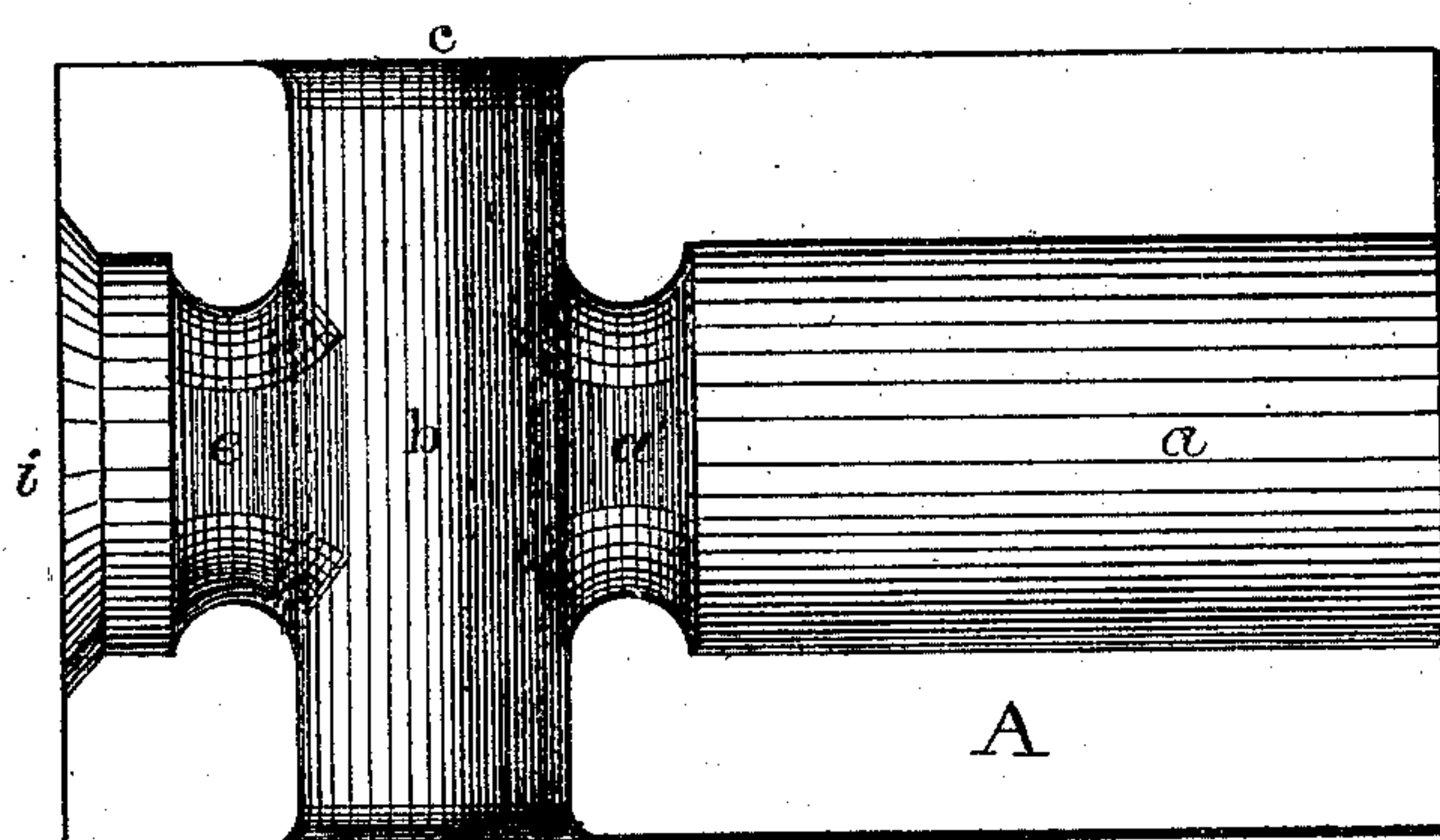


Fig. 1,

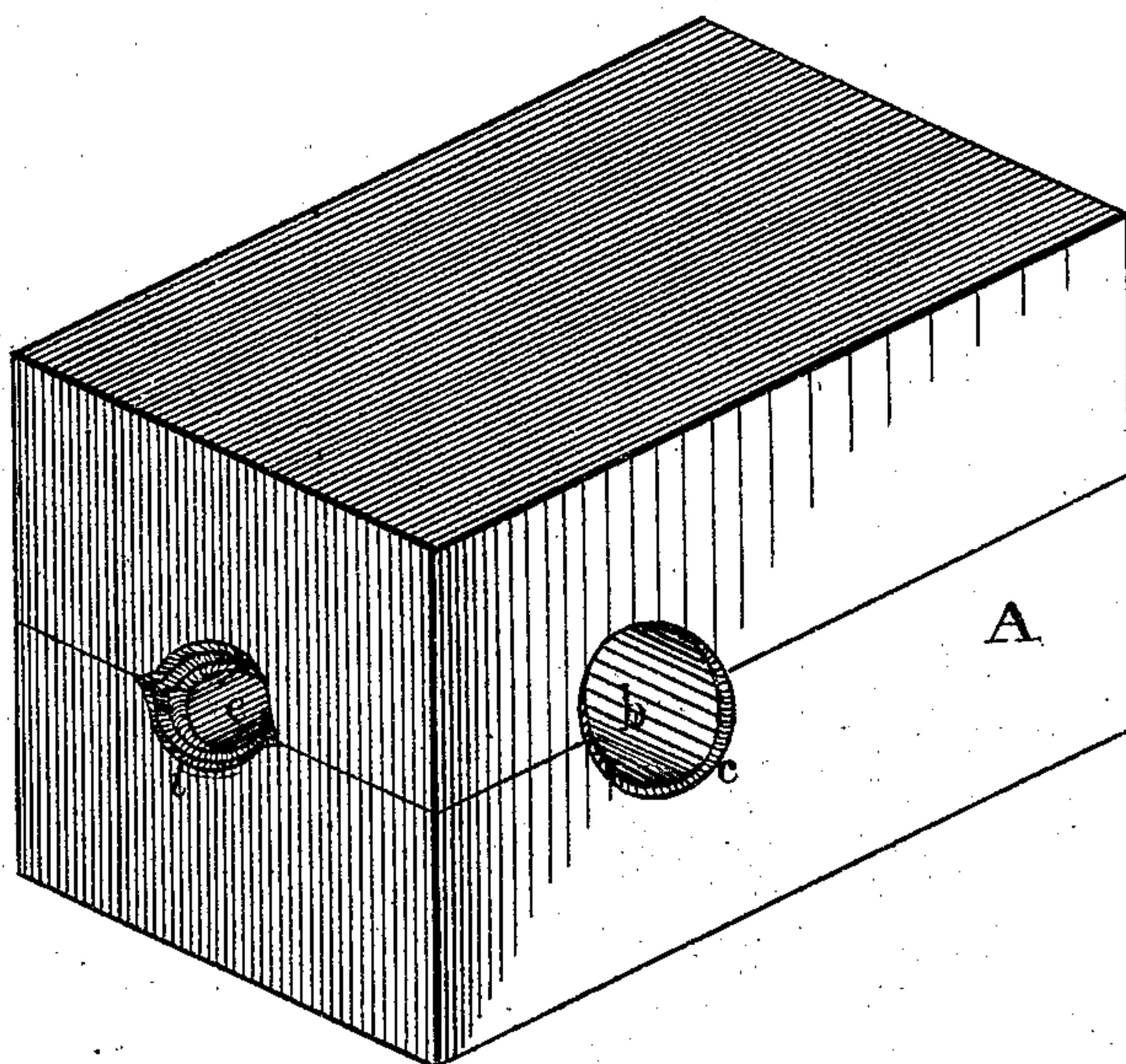


Fig. 2,

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# UNITED STATES PATENT OFFICE.

THOMAS DAFFIN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND WILLIAM BALDWIN, OF SAME PLACE.

## IMPROVEMENT IN DIES FOR FORGING HAMMERS.

Specification forming part of Letters Patent No. **143,406**, dated October 7, 1873; application filed August 29, 1873.

*To all whom it may concern:*

Be it known that I, THOMAS DAFFIN, of the city of Philadelphia, in the State of Pennsylvania, have invented a new and Improved Die for Swaging Hammers and kindred articles; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a plan of the lower half of the die. Fig. 2 is a perspective view of the upper and pieces of the die placed together.

My invention has for its object to produce a die which will clear itself of scale.

Heretofore dies have been made of the character named, so that the portion of the die making the round head and the eye portion have been cavities in the die, forming a complete chamber when the two halves of the die are brought together. In the lower half of this chamber scale collects as the metal is being struck up, and it is difficult to remove it without removing the die. At any rate, the scale has to be removed, and the die will not clear itself of scale by the metal forcing it out of the way, and as a result bad work or uneven surfaces are produced by the scale indenting the metal to be swaged. All this my invention overcomes; and it consists in a die having a transverse opening in a line with the portion of the die forming the eye portion of the hammer, and in leaving the end of the die forming the round head open, so as to allow it to clear itself of all scale by the metal pressing it out.

In order that those skilled in the art may make and use my invention, I will proceed to describe the manner in which I have carried it out.

In the said drawings, A is the lower half or bed piece of the die. The upper half corresponds to it in all respects. The portion into which the steel bar is fed, and which forms the plane-faced portion of the hammer, is shown at *a*, the metal being contracted to form a neck at *a'*. A groove, *b*, equal in the piece A to the diameter of one-half of the bulb to form the eye-piece of the hammer, runs transverse the line of the hammer, and has its ends opening at *c*.

When the upper portion of the die descends the heated metal fills into the matrix and forces out any scale that may lie in the eye portion of the matrix, and it escapes at the openings *c*. So it is with the round-headed portion. The metal being forced into the portion of the matrix marked *e*, the scale is expressed toward the opening *i*, thereby leaving the matrix free from any scale to indent or destroy the surface of the metal being swaged.

These dies may be used in any machine for swaging metals, whether operating by percussive blows or by pressure.

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

A die for swaging hammers, constructed as described, and having the portions *a'* and *e* separated by the open transverse groove *b*, for the reception of the eye portion of the hammer, substantially as and for the purpose set forth.

THOS. DAFFIN.

Attest:

RUTLEDGE WILLSON,  
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