

(No Model.)

G. F. SIMONDS.

DIE FOR MAKING ROLLED FORGINGS.

No. 384,092.

Patented June 5, 1888.

Fig. 1-

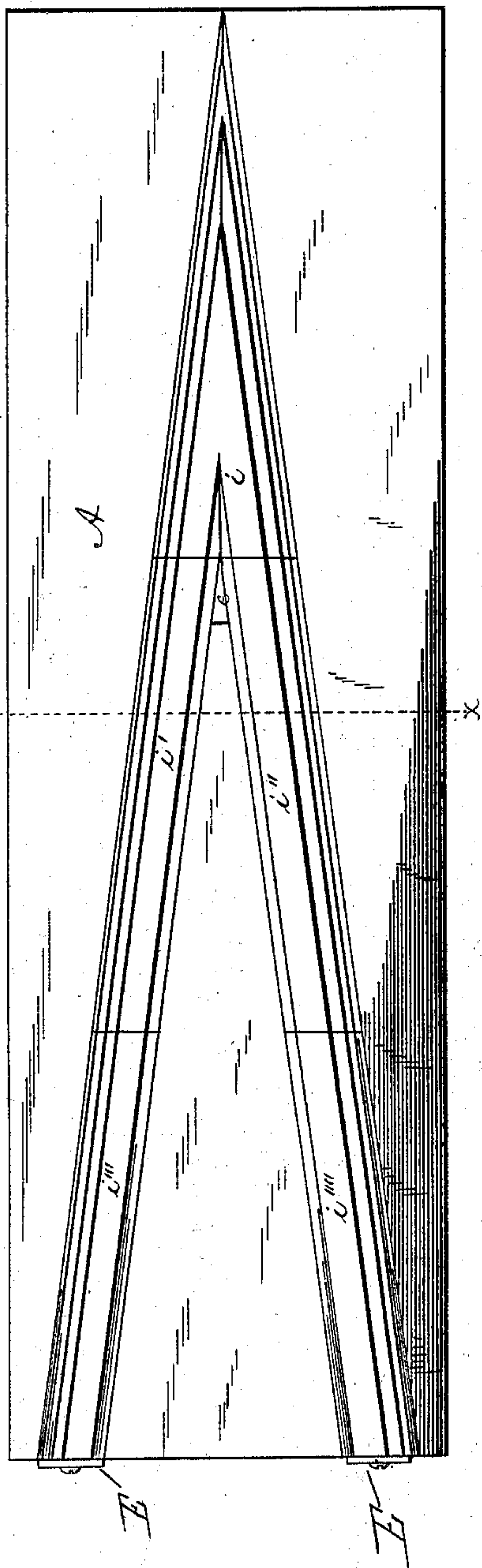
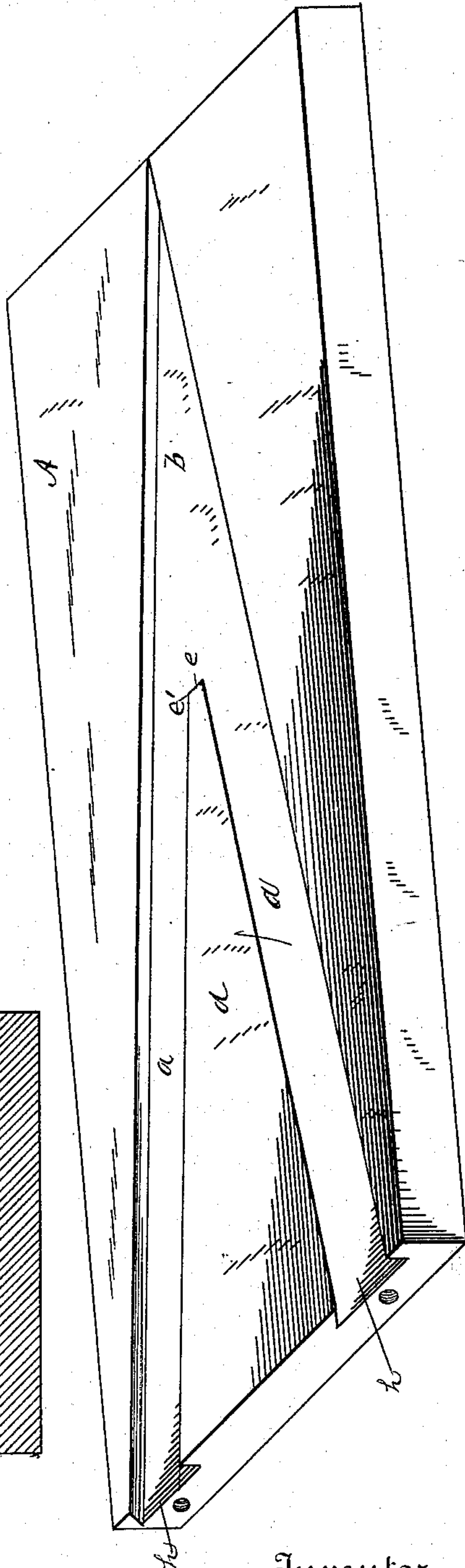
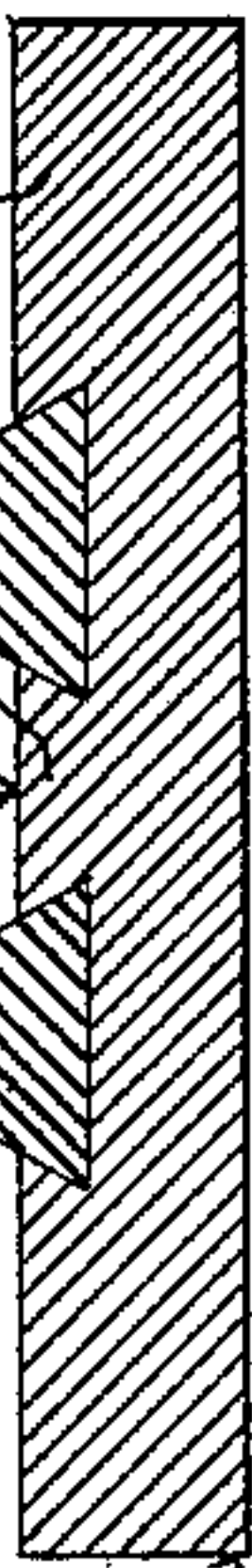


Fig. 2-  
Fig. 3-  
i d v A



Witnesses.

M. E. Hill.

Josef McAloney.

Inventor.

George F. Simonds.

By his Attorney

Jos. P. Swannore.

# UNITED STATES PATENT OFFICE.

GEORGE F. SIMONDS, OF FITCHBURG, MASSACHUSETTS.

## DIE FOR MAKING ROLLED FORGINGS.

SPECIFICATION forming part of Letters Patent No. 384,092, dated June 5, 1888.

Application filed November 2, 1887. Serial No. 254,067. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE F. SIMONDS, of Fitchburg, State of Massachusetts, have invented a new and useful Improvement in Dies for Making Rolled Forgings, of which the following is a specification.

My invention relates to dies for making rolled forgings, and is an improvement in the method of constructing the dies patented to me June 9, 1885, No. 319,754, and has especially for its object to cheapen the cost and facilitate the construction of such dies. In the patent referred to I described dies of a peculiar form for rolling and shaping round articles. The method of making such dies there described was by planing down a steel plate, leaving certain raised portions which constituted the working parts of the dies.

My improvement consists in making the working parts of a die in sections and attaching them to a bed-plate in their proper relation to each other, as hereinafter described.

In the drawings forming a part of this specification, Figure 1 is a plan of the complete die. Fig. 2 is a perspective view of the cast-iron die-supporting bed-plate, and Fig. 3 a cross-section on line *xx*, Fig. 1.

In the drawings I have shown a simple form of die for purposes of illustration; but the die may have any desired conformation necessary to produce any required article.

A base or platen, A, of cast-iron or other material of a less cost than steel or other hard material used for the working-faces of dies, has planed in it two dovetailed recesses or grooves, *a a*, which converge and unite, forming a single recess at *b*. This leaves a triangular raised face, *d*, between the two dovetailed grooves *a a*, from which is cut the point *e* at about the line *e'*. The steel working-faces of the dies are made in a series of sections, *i i' i'' i''' i''''*. The section *i*, bearing the initial working-faces of the die, is a triangular piece, having its sides cut to accurately fit the recess

formed by the meeting ends of the dovetail grooves *a a*, and is inserted with its base against the face of the bed A, formed by cutting away the raised portion or face *d* on the line *e'*, thereby affording the opportunity to pass piece *i* into the dovetail grooves until it is home on the bottoms of the grooves. The triangular piece *i* is then driven toward the meeting or converging point of the grooves *a a* until it brings up and is securely held by the sides of the dovetail. The pieces or sections *i' i'' i''' i''''* may be made of any desired length commensurate with facility of construction and perfection in hardening, and conform on their sides and lower faces to the dovetail grooves. They are inserted endwise at *h h* into the grooves and driven toward the converging point of said grooves until they abut against the piece *i*, or against each other. A convenient key, plate, or latch (illustrated at E) serves to prevent the sections from becoming displaced unintentionally.

The construction hereinbefore described enables me to make sections of the die-faces performing the work interchangeable and removable, as well as affording opportunity for perfection of hardening, when such accuracy is a substantial necessity. The groove in the sustaining medium of the working-faces of the die may be of any desired shape without departing from the spirit of my invention, and any device may be used that may be found convenient for securing the sections in place.

I claim—

A die for producing rolled forgings, formed of a series of hardened-steel sectional parts inserted in their proper relation to each other in converging dovetailed recesses in an iron base.

GEO. F. SIMONDS.

Witnesses:

JOS. P. LIVERMORE,  
M. E. HILL.