(No Model.)

G. F. SIMONDS.

METHOD OF FORGING METAL BARS.

No. 319,755. Patented June 9, 1885.

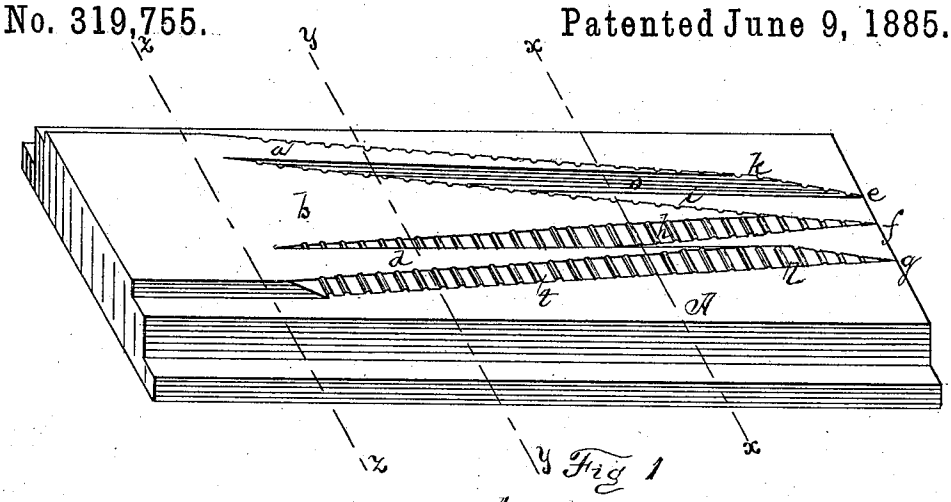
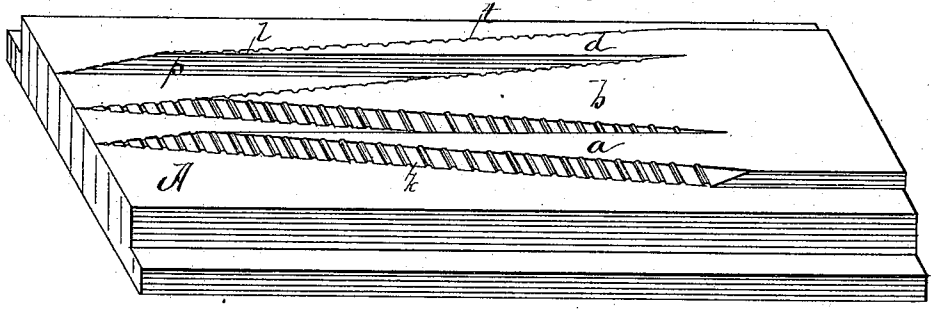


Fig 1



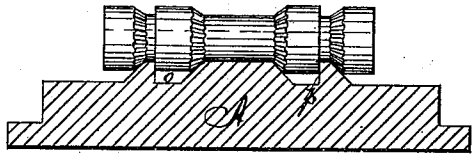


Fig. 2.

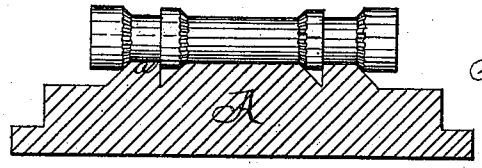
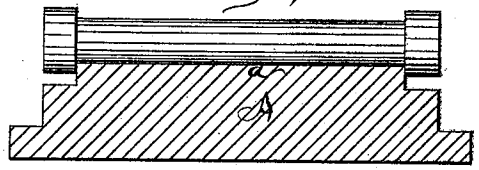


Fig. 3.

Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE F. SIMONDS, OF FITCHBURG, MASSACHUSETTS.

METHOD OF FORGING METAL BARS.

SPECIFICATION forming part of Letters Patent No. 319,755, dated June 9, 1885.

Application filed November 22, 1884. (No model.)

To all whom it may concern:

Be it known that I, GEORGE F. SIMONDS, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented certain improvements in die-faces for platens to work and shape metal articles, and a new and improved method of working metal to form articles; and I 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 are perspective views of a platen provided with my improvements. Figs. 2, 3, and 4 are sectional details and illustrations of the work.

My invention relates to platens having die-faces, which are reciprocated on the surfaces of metal articles to give them any predetermined shape or size dependent upon the configuration of the die-faces, and has for its object to reduce the length of the platen to a minimum and necessitate only a short travel to accomplish the desired result. My invention also consists in a novel method of shaping or forging metal, all of which will be hereinafter fully described and claimed.

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 platen, provided with three raised forming-surfaces, *a b d*, each composed of three intersecting converging planes, after the manner described in my application filed June 16, 1884, Serial No. 135,014. This construction of the working-faces provides three devices or agencies, which simultaneously commence work at *e f g* on the blank or ingot, and continue to work simultaneously, spreading the metal from four points outward until the operation is completed. The working-faces *h i* spread the metal from the center, and the working-faces *k l* start the metal toward the ends of the blank and spread it from the points *e g* on each side of the center of the blank, where they commence to engage the heated metal.

In Fig. 2 is illustrated the progression in change of form given an ingot or bar when it has been traversed by the platens to the line shown in the sectional view of the same figure. Fig. 2 illustrates the further change of form or spreading of the metal at the transverse line shown in the sectional view of the same figure.

The working-faces *l i h k* pitch diagonally from the surfaces *a b d*, and are provided with grooves or irregularities *t t*, to engage the plastic metal and insure it turning on its axis as the platens pass over its surface. The faces *o p* are vertical planes, and do not perform the function of spreading, and the proportions of the working-faces are so arranged and measured that by the time the platens have traversed the work to the points where faces *o i* and *p h* merge the metal which was started from the center *f*, or the offsets due to crowding it toward the ends, will merge with and pass into the reduced size or changed shape commenced at *e* and *g*, and the work passes into contact with the finishing-surface B of the platen without cold shuts or like defects.

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

The improved method herein described of forging or rolling metal articles, consisting in treating the bar, ingot, or fagot at two or more points simultaneously, to change its form and spread the metal toward its ends, substantially as described.

GEO. F. SIMONDS.

Witnesses:
R. K. EVANS,
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