(No Model.) 2 Sheets—Sheet 1.

E. GARTZE.

HAMMER.

No. 427,678. Patented May 13, 1890.

Fig. 1

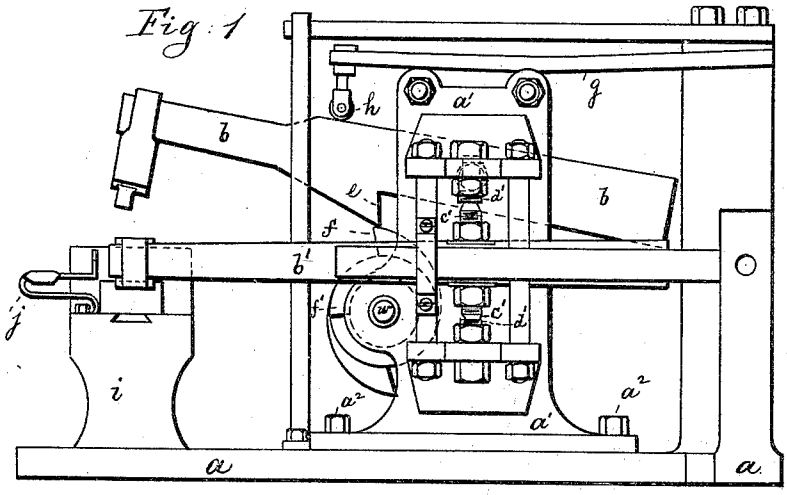


Fig 2

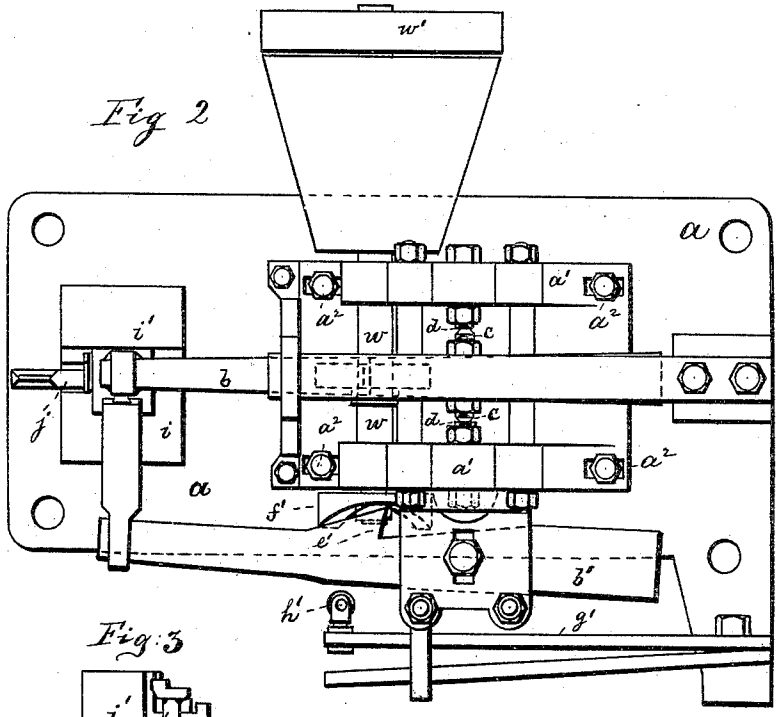
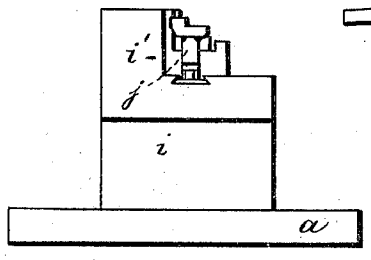


Fig. 3



Witnesses:
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Inventor:
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Roeder & Briesen

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

E. GARTZE.

HAMMER.

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Fig: 4

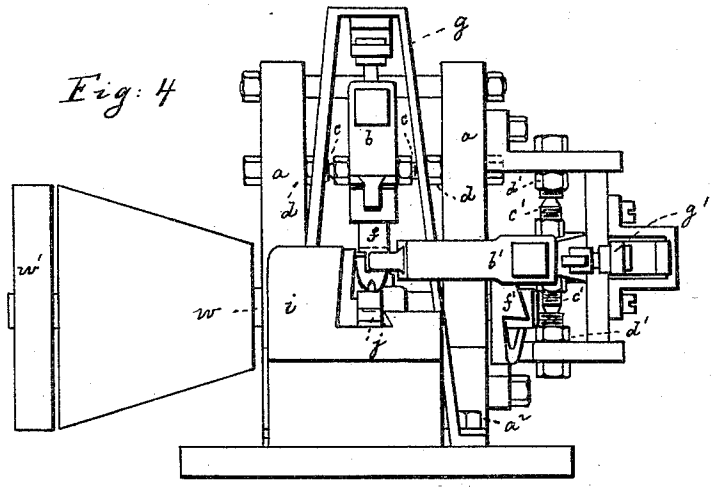
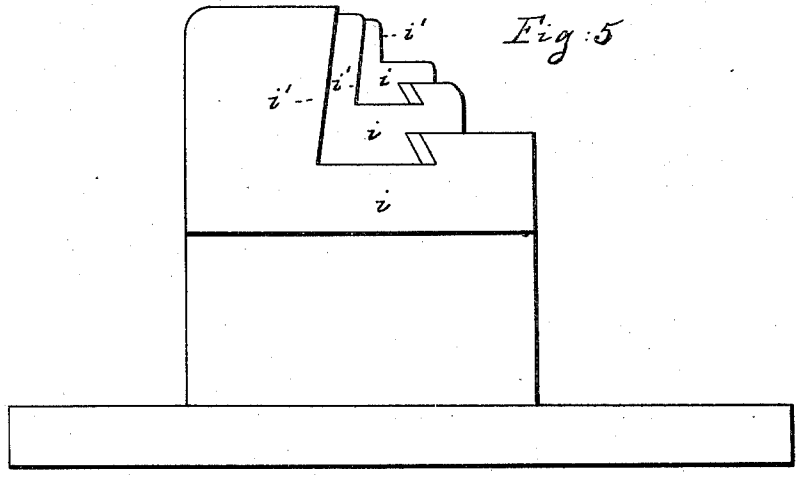


Fig: 5



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UNITED STATES PATENT OFFICE.

ERNST GARTZE, OF SOLINGEN, GERMANY.

HAMMER.

SPECIFICATION forming part of Letters Patent No. 427,678, dated May 13, 1890.

Application filed October 22, 1889. Serial No. 327,871. (No model.)

To all whom it may concern:

Be it known that I, ERNST GARTZE, of Solingen, Germany, have invented an Improved Hammer, of which the following is a specification.

This invention relates to a mechanical stamping-hammer of improved construction for forging tools, knives, forks, and similar implements. Two hammers are driven by the same power-shaft and attack the work at preferably right angles to each other, the work resting upon an angular anvil.

The invention consists in the various features of improvement more fully pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of my improved hammer. Fig. 2 is a top view thereof, and Fig. 3 an end view of the anvil. Fig. 4 is a face view of the hammer and anvil, and Fig. 5 a detail face view of the anvil.

The letter *a* represents the frame of the hammer, upon which is mounted a bearing *a'*, which is adjustable backward and forward by means of bolts a^2, that engage slots in the bearing.

b is a vertically-moving hammer and *b'* a horizontally-moving hammer. These hammers turn on spindles *c c* and *c' c'*, respectively. The spindles *c c'* are pointed and are received by sockets in the ends of bolts *d d'*, passing through slots in bearing *a'*. The bolts are tightened up by nuts, and by shifting the bolts, and with them the spindles *c c'*, the pivots of the hammers may be shifted to change the stroke. Each of the hammer-shanks is provided with a nose *e e'*, the nose *e* of the hammer *b* extending downward and the nose *e'* of hammer *b'* extending sidewise.

w is the power-shaft driven from pulley *w'*, and provided with the cams *f f'*, adapted to so engage the noses *e e'* as to cause alternate motion of the hammers. The stroke of the hammers is effected (or increased) by springs *g g'*, having friction-rollers *h h'*, that bear against the hammer-shanks.

i is the anvil provided with a series of step-shaped working-faces. The steps increase in size as they recede from the hammer-carrying frame. Of course the horizontal hammer works against the vertical side or riser *i'* of the step, while the vertical hammer works against the horizontal side. When the work is placed into the uppermost step, the stroke of the hammers is reduced, so that they operate against the sides of such step. When the work is placed into any one of the other steps, the stroke of the hammers is correspondingly increased.

If desired, a spring-cushion *j* of any desired form may be placed upon the horizontal working-face of the step that supports the work. This cushion prevents the work from being chilled by direct contact with the anvil.

What I claim is—

1. The combination of a pair of hammers pivoted at an angle to each other with an angular anvil, substantially as specified.

2. The combination of a pair of pivoted hammers operating at an angle to each other, with adjustable spindles and an adjustable bearing for changing the stroke and the position of the hammers, substantially as specified.

3. The combination of a pair of hammers operating at an angle to each other, with anvil *i*, having shoulder *i'*, and with a spring *j*, for throwing the work out of the corner of the anvil, substantially as specified.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ERNST GARTZE.

Witnesses:

FRIEDRICH HUGO HOPPE, Jr.,

WALTER HOPPE.