

(No Model.)

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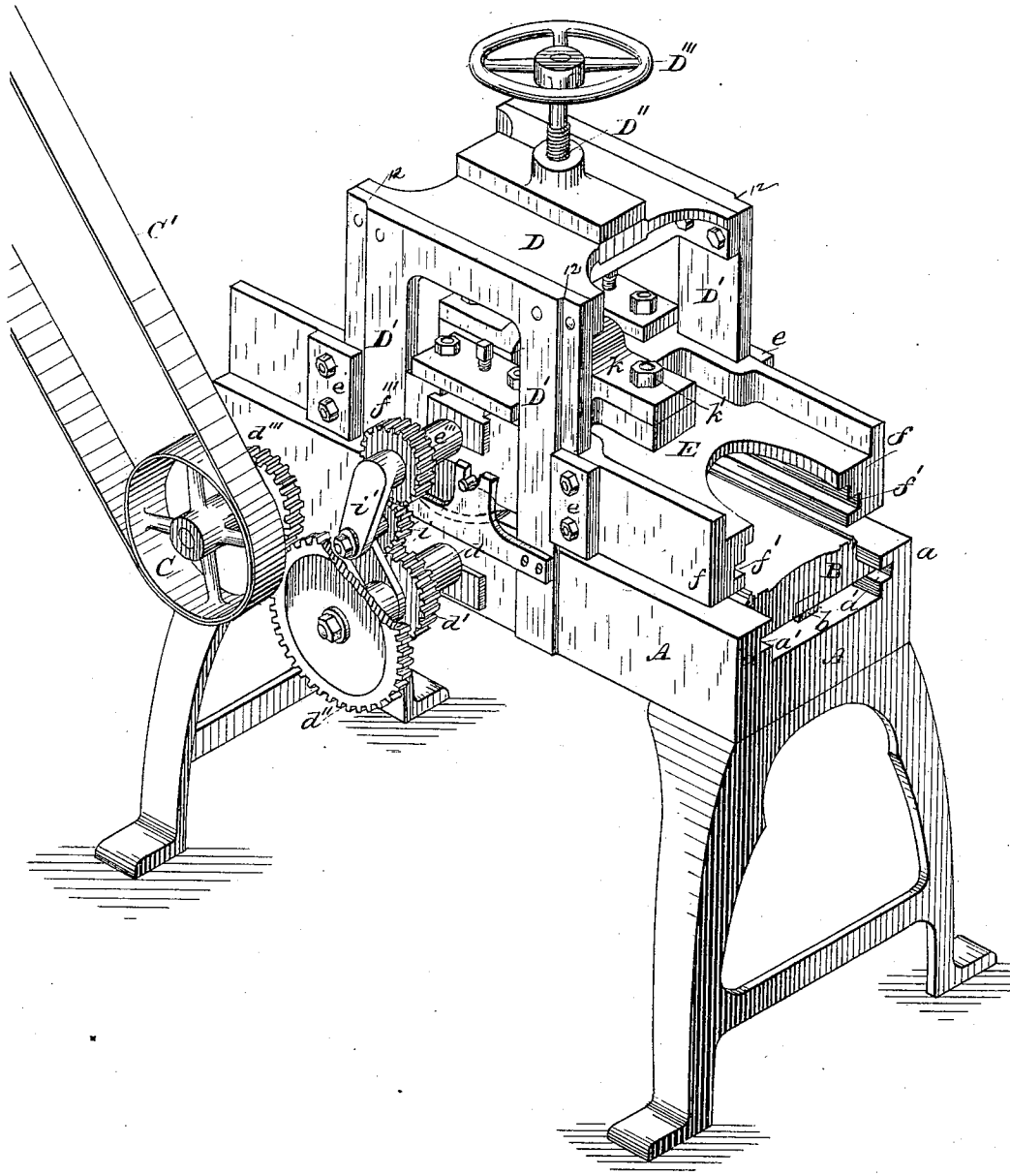
G. F. SIMONDS.

MACHINE FOR FORGING CAR AXLES AND OTHER METAL ARTICLES.

No. 319,752.

Patented June 9, 1885.

*Fig. 1.*



Witnesses:

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Inventor:

*G. F. Simonds*

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(No Model.)

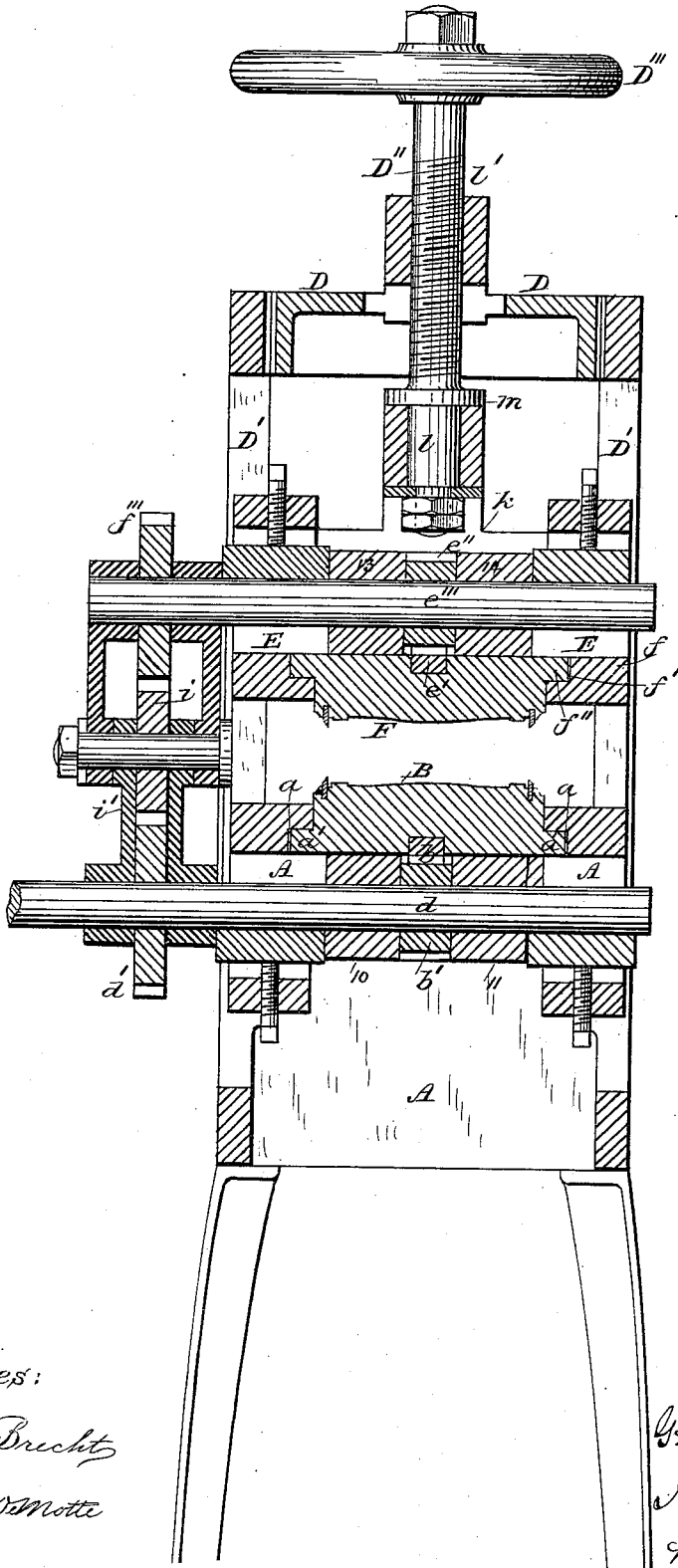
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G. F. SIMONDS.

MACHINE FOR FORGING CAR AXLES AND OTHER METAL ARTICLES.

No. 319,752.

Fig. 3. Patented June 9, 1885.



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# UNITED STATES PATENT OFFICE.

GEORGE F. SIMONDS, OF FITCHBURG, MASSACHUSETTS.

MACHINE FOR FORGING CAR-AXLES AND OTHER METAL ARTICLES.

SPECIFICATION forming part of Letters Patent No. 319,752, dated June 9, 1885.

Application filed March 26, 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  
5 Improvements in Machines for Forging Car-Axles, Gun-Blanks, and other Metal 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—

10 Figure 1 is a perspective view of my improved machine. Fig. 2 is a perspective view of the machine, the parts cut in longitudinal vertical section. Fig. 3 is a vertical cross-section of the same with the platens in the position shown in Fig. 2.

15 My invention consists in certain combinations and arrangements of mechanical devices, car-axles, gun-blanks, and other metal articles, as hereinafter fully described, and specifically pointed out in the claims.

20 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.

25 In the said drawings, A is a bed or support, mounted in any desirable way, and having extending along each edge projecting ribs *a a*, into the inner faces of which are cut ways  
30 or grooves *a' a'*, to receive and sustain the edges of the platen B. This platen B has on its lower face, in a central longitudinal line, a rack-bar, *b*, which engages with a pinion, *b'*, located on shaft *d*, under the center of the bed  
35 of the machine, and driven by shaft *d* and gearing *d'*, *d''*, and *d'''*, actuated by pulley C, moved by belt C' from an ordinary reversing-pulley on the counter-shafting. (Not shown in the drawings.) Mounted on shaft *d*, on each side  
40 of the pinion *b'*, are rollers 10 11, which back up and strengthen platen B against the thrust of the billet or blank being worked upon.

45 The frame A carries a vertical yoke, D, having four supports or standards, D', and a central screw, D'', and hand-wheel D'''. Secured to standards D' by means of ears or overlapping plates *e e*, which engage grooves or recesses 12 12 in the standards, so as to have a vertical movement therein, is a platen-sustaining carriage, E, having on its outer  
50 edges downwardly-projecting ribs or flanges *f*, provided on their inner faces with grooves

*f'*, for the reception of ribs *f''* on the edges of an upper platen, F.

On a central longitudinal line the upper surface of the platen F is provided with a rack-bar, *e'*, similar to rack-bar *b* on the lower side of platen B, and said rack-bar *e'* engages with and is driven by a pinion, *e''*, shaft *e'''*, and gear-wheel *f'''*, through the medium of pinion *i*, mounted in the link-hanger *i'*, and gears *d'' d'''*, with their pulley C.

On each side of pinion *e''*, and on the same shaft *e'''*, are rollers 13 14, which back up and sustain platen F against the thrust of the  
65 work and prevent the platen from springing.

On the center of the platen-sustaining carriage E is a pillow-block, *k*, secured by bolts *k' k'*, and forming a bearing at *l* for the lower end of the screw D'', the thread of said screw  
70 fitting a tap, *l'*, in the center of the top of yoke D, and a collar, *m*, fixed to the screw, bears on the top of the pillow-block. (See Fig. 2.) A washer and jam-nuts on the lower end of the screw prevent it from being with-  
75 drawn from the pillow-block when the screw is run up to raise carriage E and platen F, with the driving devices and rolls, and when the carriage E is to be forced down to crowd the platen F toward platen B, so as to bring  
80 their working-faces more nearly together, the collar *m* sustains the thrust of the screw.

When an article is to be subjected to the action of the platens, the upper platen is raised by drawing up carriage E through the medium  
85 of screw D''. The article is inserted between the platens, the upper platen is brought down by the screw on the article, and, by means of the gearing described, the platens are reciprocated alternately in opposite directions, and  
90 press or shape or otherwise affect the article to the point desired, the platens being meanwhile backed or braced by rolls 10 11 13 14 on the same shafts which actuate the platens.

The number of pillow-blocks and screws to sustain the movable carriage may be increased or diminished, accordingly as it may be desirable or the exigencies of the work may demand.

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

1. A fixed bearing bed or frame provided with grooves to support a movable platen and a vertically-adjustable moving frame pro-

vided with grooves to sustain a movable platen, in combination with platens B F, constructed substantially as and for the purpose set forth.

- 5 2. The yoke D, provided with grooves or recesses 12 12, in combination with the vertically-adjustable carriage E, provided with overlapping plates *e e* and platen F, substantially as and for the purpose described.
- 10 3. In a metal-rolling machine, two oppositely-reciprocating platens, B F, provided with central longitudinal rack-bars, in combination with a stationary supporting-frame, a

movable supporting-frame, and two axles, *d e''*, carrying central pinions, *e' b'*; and rollers 15 10, 11, 13, and 14, all constructed, arranged, and operated as set forth.

4. The platens B and F and their operating mechanism, and the carriage E, provided with pillow-block *k*, in combination with the yoke 20 D and screw *D''*, all constructed, arranged, and operated as described.

GEO. F. SIMONDS.

Witnesses:

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