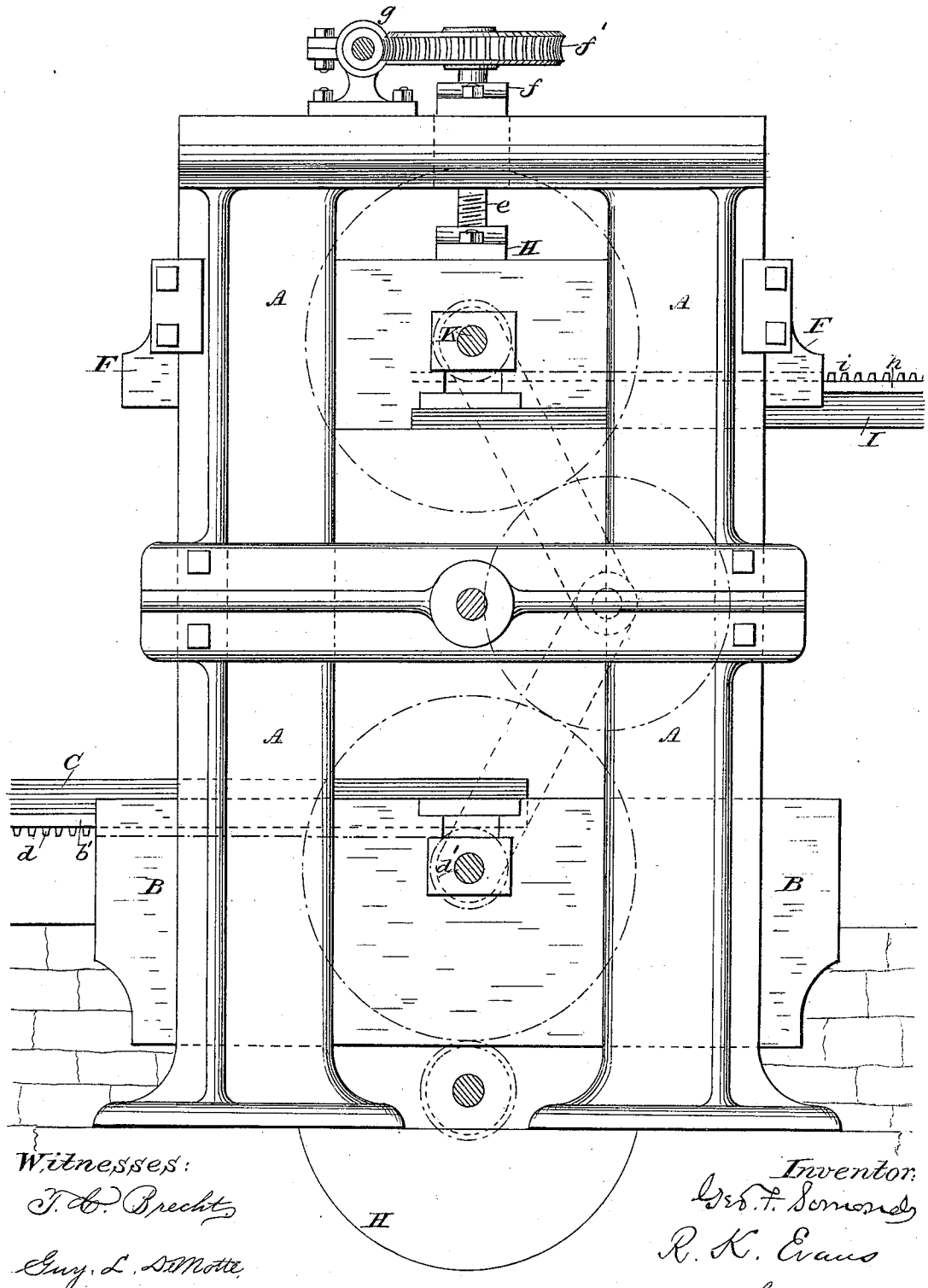
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G. F. SIMONDS.

MACHINE FOR MAKING CAR WHEELS.

No. 319,753. Patented June 9, 1885.

Fig. 1.



Witnesses:
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Guy. L. DeMotte.

Inventor:
Geo. F. Simonds
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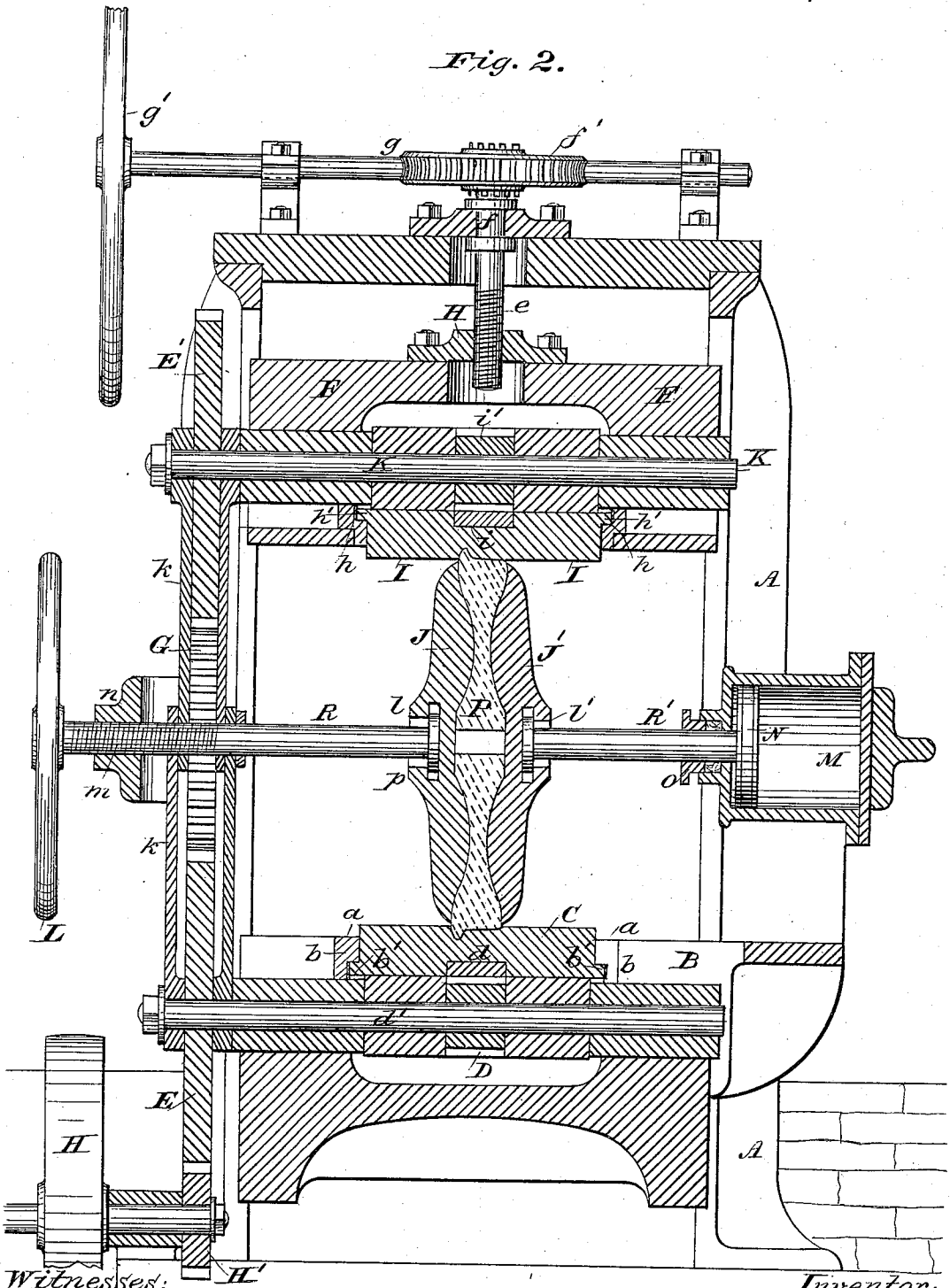
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Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE F. SIMONDS, OF FITCHBURG, MASSACHUSETTS.

MACHINE FOR MAKING CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 319,753, 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 Improvements in Machines for Making Car-Wheels; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side elevation of the machine, with the driving-gear shown in dotted lines. Fig. 2 is a vertical central section showing a car-wheel blank between the platens in process of making.

My invention relates to machinery for forming car-wheels; and it consists in sundry details of construction and arrangement of parts, as hereinafter fully described, and specifically pointed out in the claims.

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

In the said drawings, A is a frame-work, provided with a heavy bed, B, having on its edges ribs *a a*, in the inner faces of which are grooves *b b*, into which fit snugly the ribs or projecting edges *b' b'* of a lower reciprocating platen, C, which has on its lower surface, in a central line, a rack-bar, *d*, meshing with a heavy pinion, D, mounted on a transverse shaft, *d'*, on the protruding end of which is a gear-wheel, E. The turning of the gear-wheel reciprocates the platen C by means of the pinion and rack-bar. Toward the upper portion of frame A is a vertically-movable carriage, F, supported from the center of the top of the frame by means of a screw, *e*, passing down through said center, and having a fixed journal in the frame at *f*, and a screw-gear, *f'*, at its top, which is turned by a transverse screw, *g*, operated by hand-wheel *g'*. The carriage F has at its center a pillow-block, H, centrally tapped to receive screw *e*, and to move up and down as the screw is turned and carry the platen I, which is supported on the lower portion of the said carriage by means of downwardly-projecting flanges on its edges, provided with grooves *h* on their inner faces, which receive and engage the edges *h'* of the platen I. The upper face of the platen I is provided with a rack-bar, *i*, into which meshes pinion *i'*, mounted on shaft K, provided with bearings in carriage F, and having on its protruding end a gear-wheel, E'. The gears E and E' are arranged to intermesh with an intermediate pinion, G, mounted in a link-hanger, *k*, to compensate for the vertical movement of carriage F. The driving-gear is actuated by pulley H and a pinion, H'. The gearing is such that the platens are reciprocated alternately back and forth. I provide between the platens two formers, J J', mounted loosely on the ends of rods R R' by means of heads *l l'*, the said rods projecting from each side of the machine in a line transverse to the line of travel of the platens, whereby the rods have a transverse thrust against the formers, while the formers are free to revolve on the heads *l l'*. The rod R is threaded at *m*, and has a tap at *n* in the frame, through which it is run back and forth by hand-wheel L, the rod turning freely in the hub *p* of the former J. The rod R' passes through the frame of the machine at *o* and into the cylinder M, when it terminates in a piston, N. Other fittings are provided for cylinder M, to form a hydraulic press of ordinary construction, so that a heavy pressure can be imparted from it through piston-rod R' to the former J'. The blank for the car-wheel is placed with one surface against former J, which has already, by means of screw-rod R, been set up to the proper position, and former J' is brought against the other surface of the blank by the press M with all the pressure found desirable. While this pressure is being exerted on the faces of the blank P, the lowest point of which rests on platen C, the upper platen, I, is brought down on the edge of the blank, and the machinery is started to reciprocate the platens, meantime platen I being gradually forced down on the blank as it revolves between the platens. This operation forces the periphery of the blank to assume the shape designed to be imparted by the matrices of the platens, and at the same time condenses and polishes the metal at and adjacent to the periphery. At the same time the platens are doing their work, the formers J J', under the enormous pressure of the hydraulic press, are shaping as well as condensing the metal of the faces of the blank. The

pressure on the formers is to be adjusted, when desired, to such an extent as to simply sustain the faces of the blank and prevent distortion.

I do not desire in this application to claim as new the subject-matter or any part thereof claimed in my application filed of even date herewith, and being Serial No. 125,633, of 1884.

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

1. The platens I and C, in combination with two formers, J J′, arranged between said platens, and adapted to revolve as the platens move, substantially as described.

2. The former J and screw-rod R, connected loosely by head *l*, in combination with former J′ and rod R′, connected loosely by head *l*′, piston N, pump-cylinder M, and platens I C, all constructed, arranged, and operated as set forth.

GEO. F. SIMONDS.

Witnesses:
F. B. EVANS,
T. C. BRECHT.