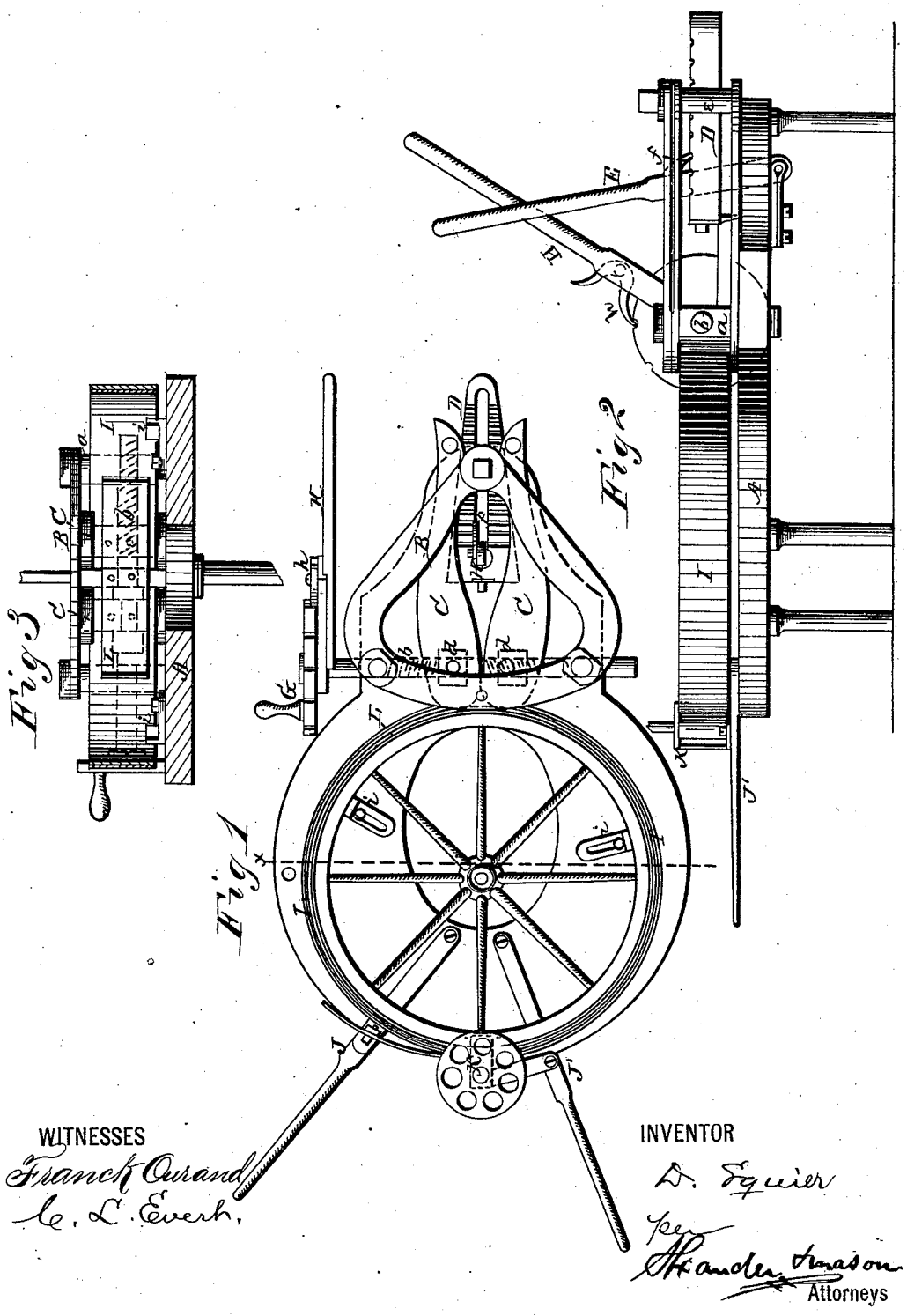
D. SQUIER.

Tire-Setter.

No. 161,834. Patented April 6, 1875.



WITNESSES

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DANIEL SQUIER, OF BATTLE CREEK, MICHIGAN.

IMPROVEMENT IN TIRE-SETTERS.

Specification forming part of Letters Patent No. **161,834**, dated April 6, 1875; application filed August 12, 1874.

To all whom it may concern:

Be it known that I, DANIEL SQUIER, of Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Tire-Setters; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to machines for setting tires on wheels; and it consists in the construction and arrangement of devices whereby the tire is upset or shrunk equally all around the wheel, and wheels of any size may be operated upon by the same machine, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of my machine. Fig. 2 is a side elevation of the same. Fig. 3 is a transverse vertical section through the line *x x*, Fig. 1.

A represents the bed of my machine, supported upon suitable legs. On the bed A are short posts or standards *a a*, supporting a frame, B. In two of said posts a shaft, *b*, has its bearings, and this shaft is provided with right and left screw-threads, as shown in Fig. 1, said screws being passed through nuts *d d*, which are provided with pins or pivots at the upper and lower ends. On these pins are pivoted levers C C, the outer ends of each set of levers being connected by a pin on which is a friction-roller, *e*. The double levers, or pairs of levers, are arranged to move between the bed A and frame B, and between said two pairs is a wedge-shaped slide, D, notched upon its upper side, and operated by means of a lever, E, with pawl *f* pivoted thereto. Upon one end of the screw-shaft *b* is a crank-wheel, G, for turning the same, and in addition thereto is a lever, H, placed loosely on the end of the shaft, and provided with a pawl, *h*, to take into notches on the periphery of the wheel G. The pawl *h* is double, as shown in Fig. 2, so that it can be turned to either side, and by the working of the lever H the shaft *b* turned in either direction. I I represent two metal straps or bands, which are cut in the center, and the cut ends attached to the inner ends of the levers. The ends of the two straps or bands overlap each other, and one end of the outer band is fastened to a lever, J, pivoted on the bed A. The opposite end of the inner band is fastened to a pinion, K, which is attached to a corresponding lever, J′, also pivoted to the bed. The wheel to be operated upon is laid flat upon suitable guides *i i* on the bed A, within the bands I I. The levers J J′ are then forced outward as far as possible, tightening the bands I I around the wheel, and holding the same against a spring-cushion, L, under the inner end of the frame B. When the bands are tightened by the levers J J, the pinion K is screwed up, thereby firmly holding the four ends of the two bands together. The screw-shaft *b* is then turned by means of the crank-wheel G, so as to spread the inner ends of the levers C C, drawing the bands I tighter around the wheel. When the screw-shaft cannot be turned any longer by means of the crank-wheel G the lever H and pawl *h* are brought in requisition, and more power obtained for the same purpose.

More power is also obtained by means of the lever E and wedge D, to further tighten the bands. By these manipulations of the various parts the tire is upset or shrunk around the wheel equally on all parts without any straining, bending, or kinking. With this machine one man can do the whole work, and any sized wheel may be placed in the machine and operated upon without change of any part; and a perfectly circular form is maintained, whatever the size of the wheel may be, and whatever the amount of shrinkage required, insuring perfect work under all circumstances.

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

1. The combination of the pivoted levers J J′, pinion K, and bands I I, substantially as and for the purposes herein set forth.

2. The combination of the bands I I, levers C, pivoted nuts *d d*, and right-and-left-hand screw-shaft *b*, said shaft being operated by a

crank-wheel and a pawl and lever, substantially as and for the purposes herein set forth.

3. The combination of the bands I I, levers C C, and wedge-slide D, said slide being operated by means of the lever E and pawl *f*, substantially as and for the purposes herein set forth.

In witness that I claim the foregoing I have hereunto set my hand this 29th day of July, A. D. 1874.

DANIEL SQUIER.

Witnesses:

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