W. D. G. QUIGLEY.

Tire-Tighteners.

No. 137,957. Patented April 15, 1873.

Fig. 1.

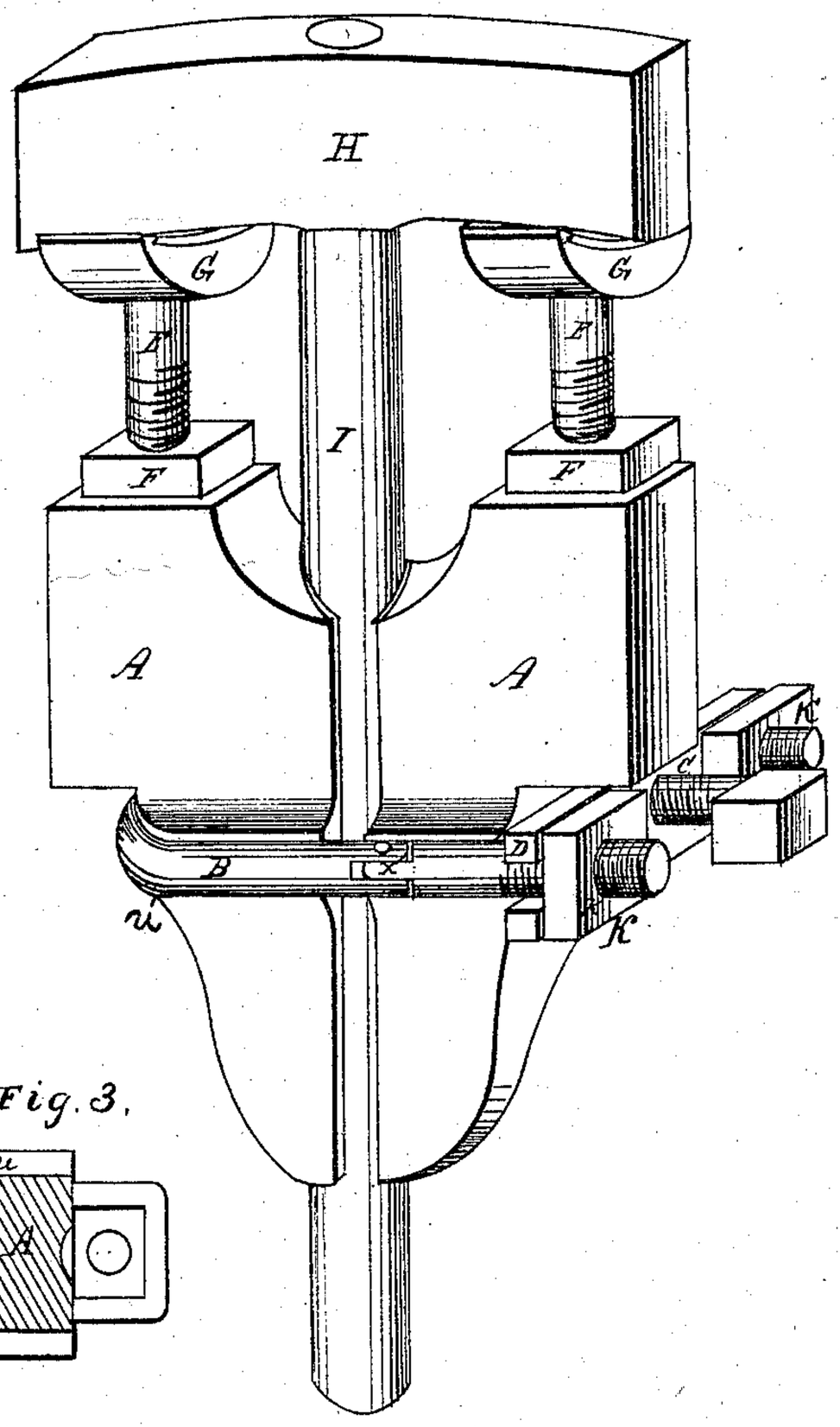

Fig. 2.

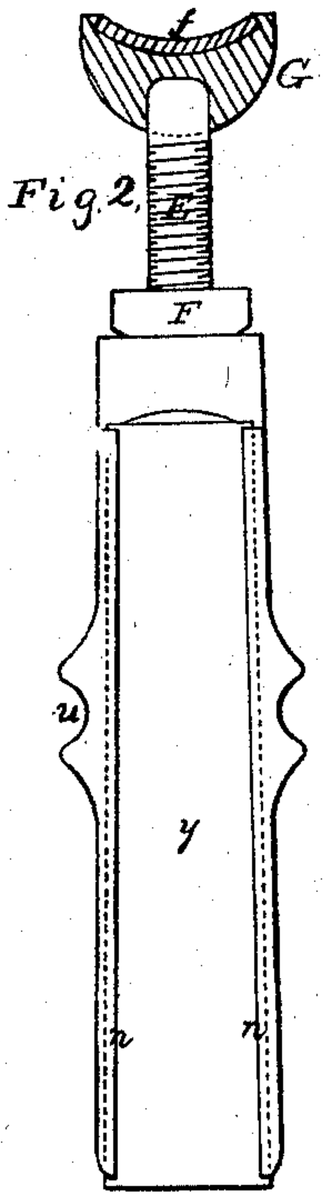

Fig. 3.

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WILLIAM D. G. QUIGLEY, OF SPRING VALLEY, NEW YORK.

IMPROVEMENT IN TIRE-TIGHTENERS.

Specification forming part of Letters Patent No. **137,957**, dated April 15, 1873; application filed October 19, 1872.

To all whom it may concern:

Be it known that I, WILLIAM DAVID GALE QUIGLEY, of Spring Valley, in the county of Rockland, in the State of New York, have invented a new and useful Improvement for Tightening Tires on Wagon-Wheels; and I do hereby declare that the following is a full and complete description thereof, reference being had to the accompanying drawing and letters marked thereon.

My invention relates to means for tightening the tires of carriage-wheels by forcing the fellies outward against such tires; and it consists in the novel construction and arrangement of the clamping and tightening apparatus, hereinafter described, and which is intended to serve efficiently for the purpose mentioned.

H of the drawing represents a section of the fellies of a carriage-wheel, and I a spoke thereof.

A A represent two jaws or clamps, grooved, as shown, so that when on duty they shall encircle about four-fifths of the spoke. In order to protect the spoke from injury, and also to adapt my device for clasping spokes of different sizes, I form grooves or recesses in the concave parts of these jaws adapted to receive and hold leather or other suitable plates, which plates are held in position by means of projections or flanges, marked *n* on Figure 2. One of these plates is represented on Fig. 2 as well as the method of adjustment. It is marked Y on said drawing, and is attached to the curve of the jaw by sliding endwise under the flanges *n*, as shown. To adapt the jaws to a small spoke I place thick plates in said recess, but for a large spoke thin plates only are required. I also form a horizontal groove on both the front and rear sides of said jaws, as shown at *u*, and cut mortises therein, as represented on the drawing, to receive the hinged staple B and the latch D, hereinafter described. B represents a staple of wrought-iron hinged at *x*, and extending around three sides of the clamps A, as shown. This staple rests in the grooves *n* above mentioned, and has a thread formed on each end adapted to receive the screw-nuts *k*. D represents a latch arranged to be attached or detached at will from the open end of the staple between the screw-nuts *k* and the mortised side of the right-hand jaw A. This is effected by constructing one end with a square opening and passing it over the hinged end of the staple, as shown on the drawing. C represents a set-screw with a square head adapted for operation by a wrench in the usual manner. To attach the jaws firmly to the spoke the operator is required to arrange the clevis or staple in the manner represented on the drawing, and then with a suitable wrench turn the nuts *k* and the set-screw C. These, respectively, press the latch against the clamping-jaws and tighten them sufficiently to serve as a rest and support for the felly lifting-jack screws, described hereafter. G G represent two concave iron pads adapted to fit the convex lower side of a felly on their upper surface and the points of the jack-screws E on their lower surface. I form recesses and holding grooves or flanges in each of these pads to receive concave plates of leather or other suitable material, constructed in the manner shown on Figs. 2 and 3. These plates are marked *f* on the drawing, and serve the double purpose of adapting the concave upper surface of the pad to the size and shape of the felly, and also to protect such fellies from injury. It will be observed that the upper end of the jack-screw E rests in a recess formed in the pad, and does not protrude through said pad as is usual in such devices. The jack-screws E are, respectively, constructed with a square head fitted to a recess in the jaws A and with a point resting against the bottom of a pad, G. F represents a nut attached to each of the jack-screws, and which are actuated by a wrench in the usual manner. To lift or force the felly outward against the tire the operator is required to turn the nuts F after the clamping-jaws are properly secured in position. By the means above described the fellies may not only be tightened against the tire, but the spoke may also be tightened in the hub.

To remove the apparatus from the spoke I loosen the set-screw in the latch, and also loosen the nuts *k* on the threads of the staple; I then turn the hinged end of the staple outward; the latch falls and the spoke is free.

I am aware that jaws for clamping the spokes are not new; and I am also aware that lifting-screws for forcing the felly outward, and wraps

for protecting the spoke, have been in use before the date of this my invention; I do not, therefore, claim such jaws, wraps, or screws, broadly; but

I claim as my invention—

1. In apparatus for tightening the tires of carriage-wheels by forcing the fellies outward, the combination of the jaws A A having groove *u*, the staple B having hinge *x*, and the latch C having one open end, constructed and arranged substantially as specified.

2. In a tire-tightening machine, recessed jaws A having flanges or grooves *n* adapted to receive plates *y* of different thicknesses, substantially as and for the purpose herein set forth.

3. In a tire-tightening machine, the recessed pads G, constructed with holding flanges, as described, and adapted to hold plates *f* of different thicknesses, substantially as and for the purpose specified.

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Witnesses:

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