

S. H. HODGE.
Tire-Tighteners.

No. 154,481.

Patented Aug. 25, 1874.

Fig. 1.

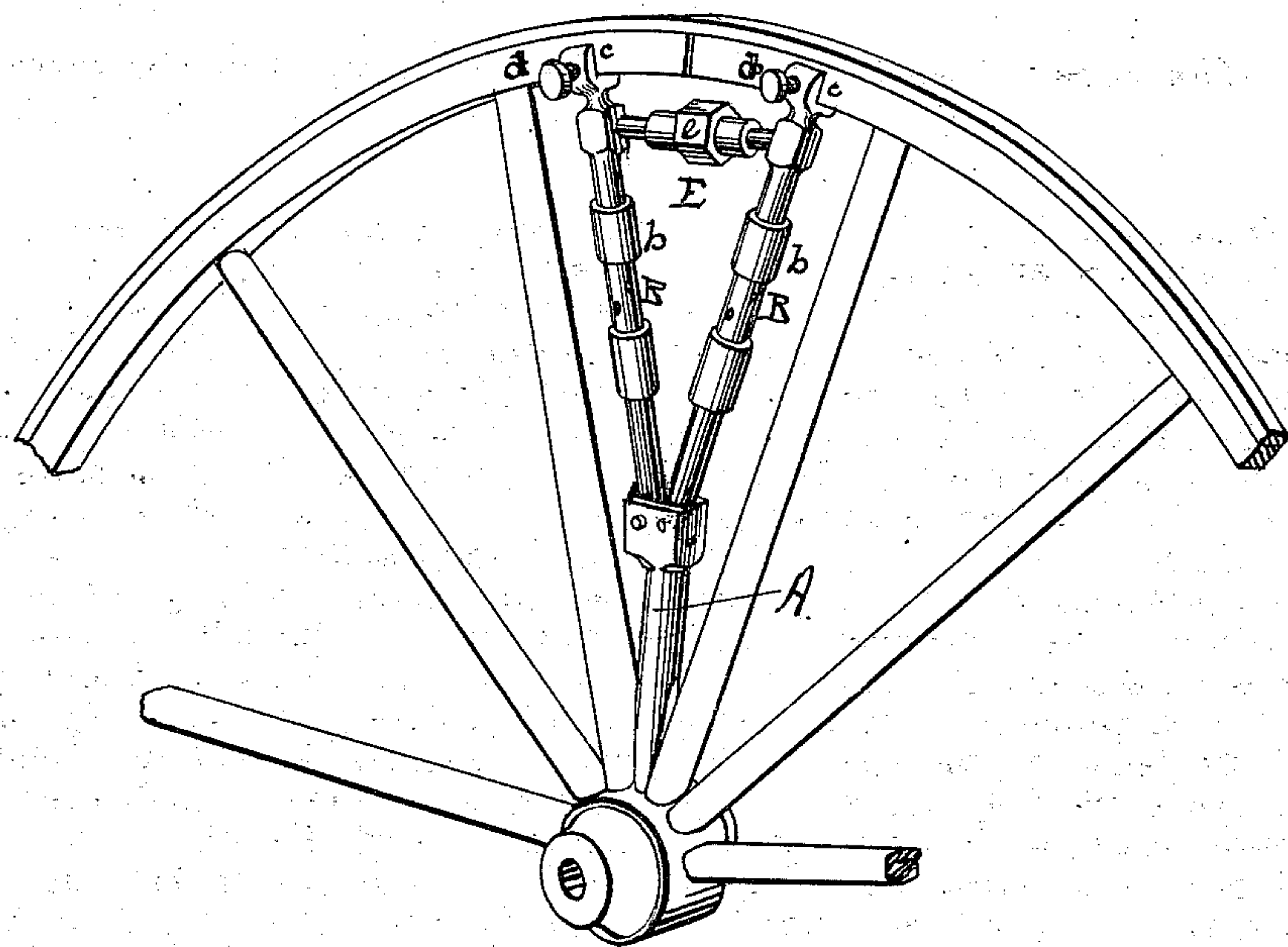


Fig. 2.

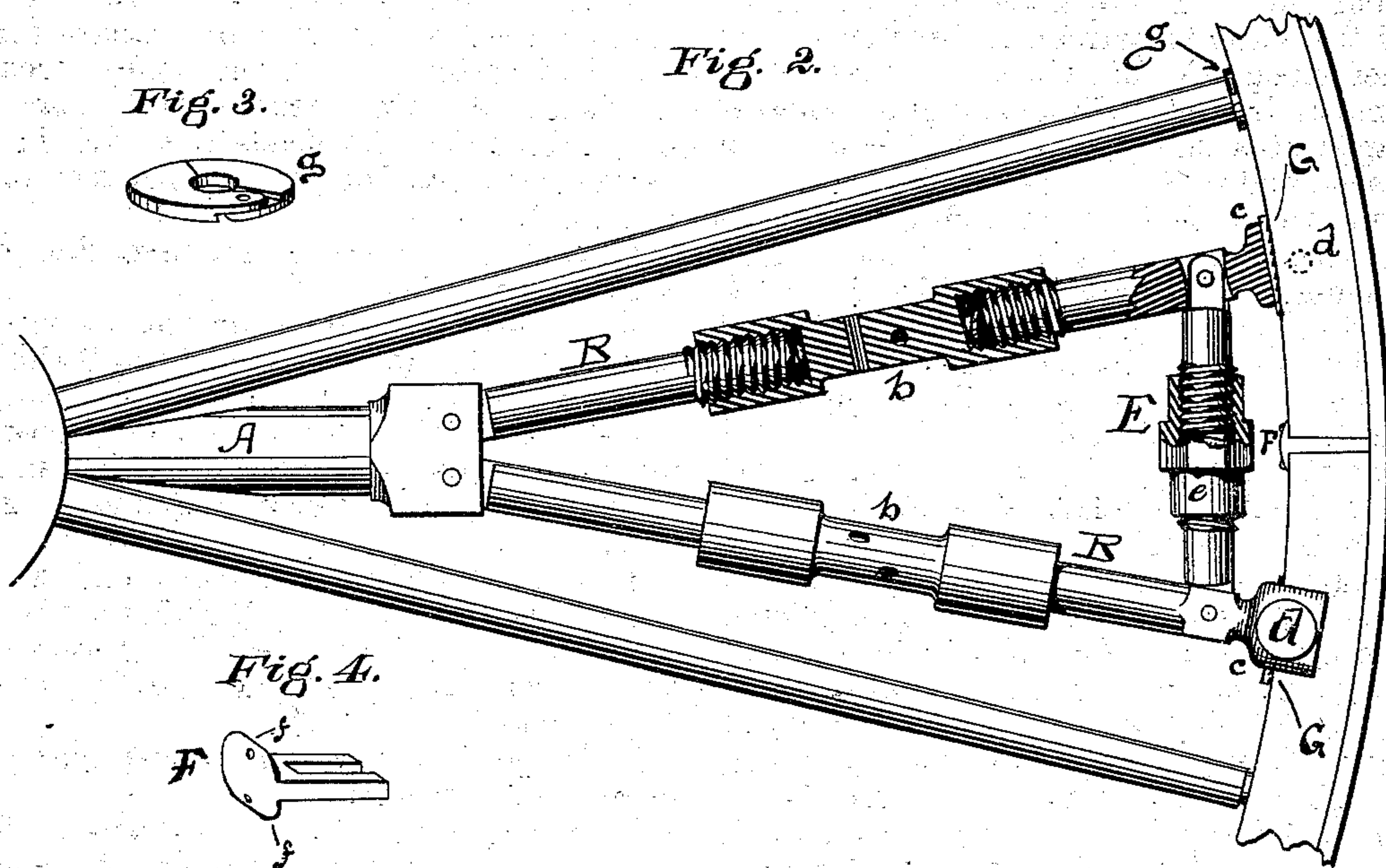
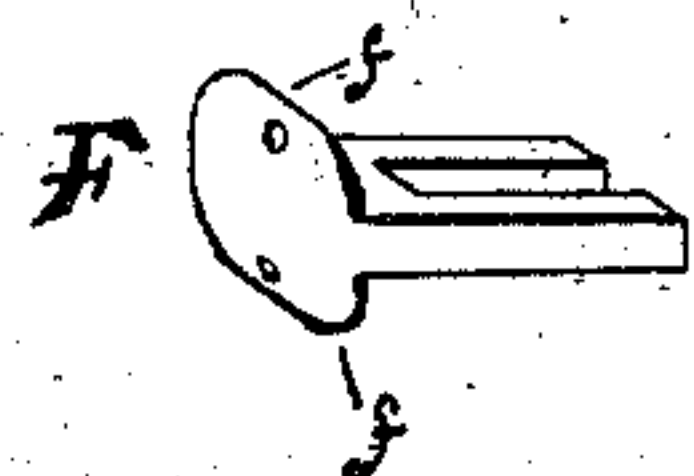


Fig. 3.



Fig. 4.



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UNITED STATES PATENT OFFICE.

STEPHEN H. HODGE, OF MASON CITY, ILLINOIS.

IMPROVEMENT IN TIRE-TIGHTENERS.

Specification forming part of Letters Patent No. **154,481**, dated August 25, 1874; application filed July 7, 1874.

To all whom it may concern:

Be it known that I, STEPHEN H. HODGE, of Mason City, in the county of Mason and State of Illinois, have invented a new and useful Improvement in Wheel-Expanders; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a wheel, with my wheel-expander in position. Fig. 2 is a sectional elevation of the same. Fig. 3 is a perspective of a washer used around the tenon of the spoke. Fig. 4 is a perspective of the felly-wedge.

This invention relates to that class of tire-setters which operate to expand the felly of the wheel, and cause it to fill out to and fit the tire.

Heretofore tire-setters of this class have operated to expand the wheel in radial directions only. My apparatus operates to expand the wheel in peripheral directions. The former elongates the wheel or causes it to assume an irregular elliptical figure, whereas my apparatus enlarges the wheel equally at all parts, and preserves its circular figure.

I am aware that an expanding-screw has been set in the joints between the ends of the fellys, the operation of which is to expand the wheel in peripheral directions, but such devices have always formed portions of the wheel, and could not readily be applied to a wheel already finished.

That others may fully understand my invention, I will particularly describe it.

A is the fulcrum or base-piece, fitted to rest against the hub, and between two of the spokes of the wheel. B B are two arms, jointed to said base-piece A, and made adjustable as to length by means of screw socket or sleeves *b b*. For the purpose of securing a rapidity of operation, these sleeves *b b* may be provided with right and left hand screw-threads, as shown in the drawing. At the extremity of each arm B is a head, *c*, provided with clamping-screw *d*, and between the extremities of the arms B B there is placed an expanding screw or jack, E, which may also be provided with a screw-sleeve, *e*, with right and left hand screws, as shown.

When set for operation the base of the fulcrum A is placed against the hub, between the spokes, as shown in Fig. 1. The arms B B

are then elongated by means of sleeves *b b* until the heads *c* clasp the inner edge of the felly, when the clamp-screws *d d* are applied, and said heads are securely fastened to said felly. This attachment is made so that the joints between the adjoining fellys are between the heads. When the jacks E are operated the heads *c* are forced away from each other, and the felly-joint will be opened and the felly enlarged so as to fill the tire. This effect will cause the felly to loosen and move outward upon such spokes, and its return to its old position is prevented by the introduction of washers between the shoulders of the spokes and the fellys, and also between the parted ends of the felly. For this purpose washers in the form of flat staples have been used, but I prefer a jointed washer, *g*, such as shown in Fig. 3, which may be opened to put it in place, and, when closed around the dowel of the spoke, forms a complete support all around. The felly-wedge F is provided with ears *f* and holes through which nails or screws may be inserted to hold the wedge securely in place. Serrated wedges G G may also be placed under the heads *c*, to aid in preventing any slip during the operation of expansion.

Having thus described my invention, what I claim as new is—

1. A wheel-expander composed of two adjustable arms, provided with clamps whereby they may be secured to the felly of a wagon-wheel, combined with an expanding-screw to force said arms away from each other and expand the felly in peripheral directions, as set forth.

2. In combination, the fulcrum A, the extension-arms B B, and clamping-heads *c c*, with the expanding-screw E between said arms to force them apart, as and for the purpose set forth.

3. The jointed washer *g*, to raise the spoke-shoulder, as set forth.

4. The felly-wedge F, provided with perforated ears *f f*, for the reception of holding screws or nails, as set forth.

5. In combination with the arms A and clamp-heads *c*, the serrated wedges *g g*, to prevent said heads from slipping, substantially as set forth.

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