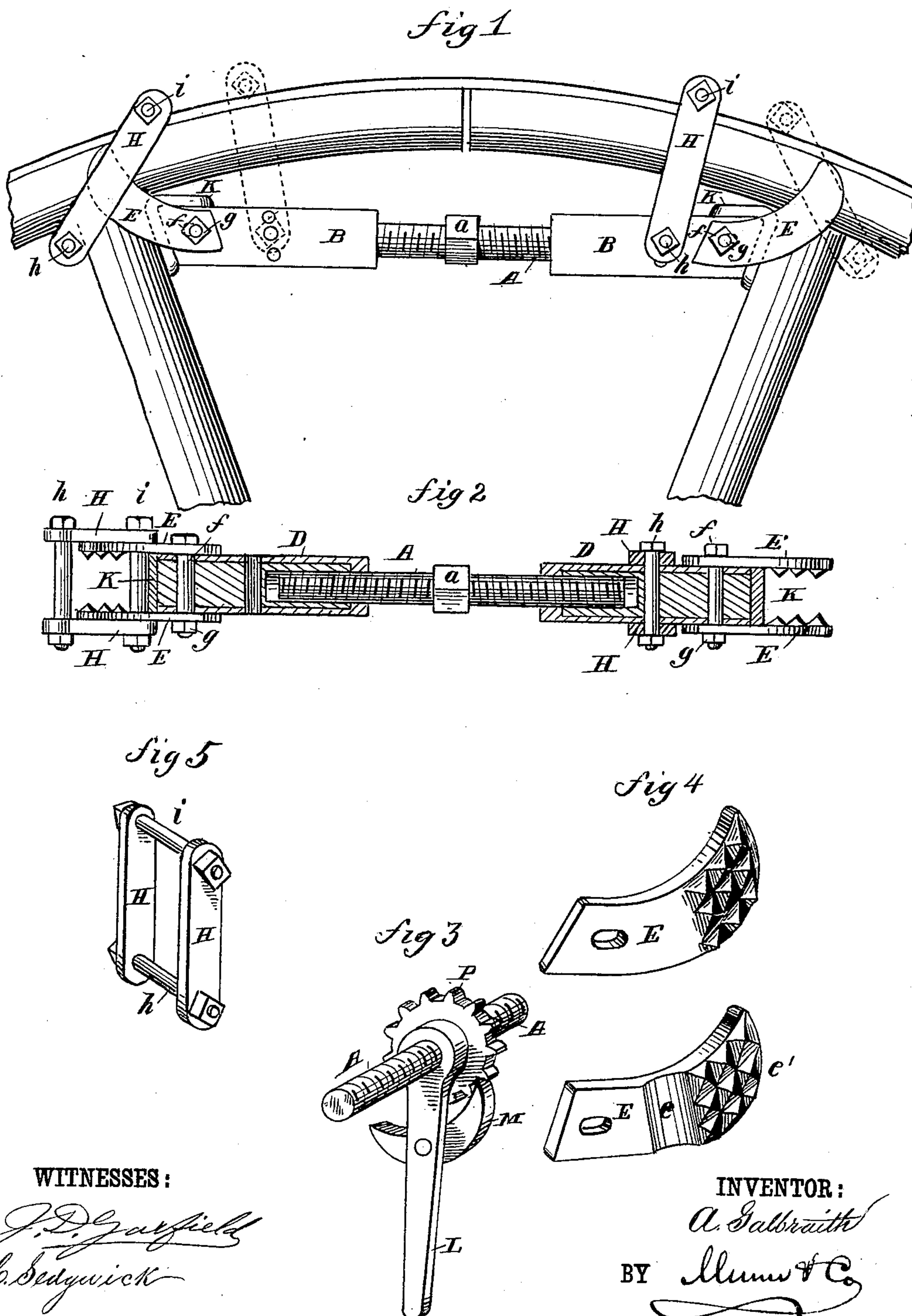


(No Model.)

A. GALBRAITH.  
FELLY TIGHTENER.

No. 270,413.

Patented Jan. 9, 1883.





# UNITED STATES PATENT OFFICE.

ARCHIMEDES GALBRAITH, OF AMADORE, MICHIGAN.

## FELLY-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 270,413, dated January 9, 1883.

Application filed May 2, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ARCHIMEDES GALBRAITH, of Amadore, in the county of Sanilac and State of Michigan, have invented a new and useful Improvement in Felly-Tighteners, of which the following is a full, clear, and exact description.

The object of my invention is to provide means for tightening or taking up the play in fellies of wheels in cases where it is not convenient or desirable to do so by having the tire reset.

My invention consists in a novel construction, arrangement, and combination of a right- and-left-threaded screw, two internally-threaded bars, two pairs of clamping-jaws, and two pairs of fastening-bars, together with certain details connected therewith, whereby provision is made for tightening fellies, either by drawing or pushing, without removing the tire, and, if necessary, without removing the load which may be upon a wagon, as hereinafter more particularly described.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of my invention in position for use. Fig. 2 is a longitudinal sectional view. Figs. 3, 4, and 5 are detail views.

A represents a right-and-left-threaded screw with an angular head, *a*, midway of its length.

B B are two bars, which are provided respectively with right-hand and left-hand threads. The bars may be of iron and have the threads formed in them, or they may be of wood simply bored and provided with straps D D, embracing two or more sides, and having the threads formed in the portions which are at the inner ends of the bars, or may be made of any suitable form or material.

E represents a plate having its inner surface provided with serrations; or its inner surface may be provided with a groove, *e*, or recess to fit over the spoke, and a serrated portion, *e'*, at one end to clasp upon the felly. It is further provided with a slotted hole at the other end to allow for adjustment with the bars B and the wheel. Two of these plates are attached to the outer end of each bar B by a

bolt, *f*, passing through them and through the bar and fastened by a nut, *g*, and thus form a pair of clamping-jaws.

H represents a clamping-bar having bolt-holes at its ends for the reception of bolts *h* and *i*. Two of these bars are attached to each bar B, between the plate E and the inner end of the bar, by the bolt *h*, passing through them and through the bar B and fastened by a nut, and thus form a pair of fastening or clamping bars; but the bars H are more particularly intended for use to clamp across the ends of the clamping-jaws E to hold the said bars E securely upon the felly when the tightener is to be used to draw the fellies together, as shown in Fig. 1. The outer end of each bar B, between the clamping-jaws E, is provided with a cushion, K, which may be of chamois skin, cloth, felt, rubber, or any other suitable material.

The operation of my invention is as follows: The apparatus is placed between two spokes of a wheel, near the felly, with the cushioned ends of the bars bearing against the spokes. The clamping-jaws E are then pressed closely against the two opposite sides of the felly and secured by tightening the nuts *g* on the bolts *f*. The bars H are then placed one on each side of the felly and tire and secured by the bolts *h* and *i* and their fastening-nuts, the bolts *i* being passed through the outer ends of the bars outside of the tire, or, if it is intended to take up the play in the fellies, by drawing the fellies together the bars H are placed one on each side of the clamping-jaws E and secured by the bolts *h* and *i*, and the ends of the jaws E thus held firmly to the felly by tightening the bolts. The fellies are tightened by turning the screw A in one direction or the other. If they are to be drawn toward each other, the screw is turned so as to screw both of the threads into their respective bars, and the spaces between the fellies and the tire are filled by thin pieces of any suitable material put in with lead, paint, or any cementing substance to hold them in place. This is to be done evenly around the wheel, so as not to throw the wheel out of shape. If they are to be pushed outward away from each other and against the tire, the screw is turned in the opposite direction, so as to unscrew the threads from their respective bars,



and the joints between the ends of the fellies are filled by pieces of any suitable material to make the ends of the fellies bear solidly against each other.

5 The screw A may be turned by means of an ordinary wrench applied to the head *a*, or the device shown in Fig. 3 may be employed. This consists of a lever, L, having its fulcrum on the screw A, and carrying a pawl, M, en-  
10 gaging with a ratchet-wheel, P, carried by the head *a*, as shown in Fig. 3.

The advantages of my invention are: it is cheap and simple in construction and is strong and durable. It can be used to tighten the  
15 fellies by either drawing or pushing. The cushions K prevent the marring of the painted surface of the spokes and fellies, and the serrated clamping-jaws take hold of the wood of the fellies, so as not to injure the same. The  
20 fastening-bars H hold the apparatus securely in place and prevent it from slipping in either direction. It can be used by any one, and can be used to tighten a wheel in cases where there is not time to have the tire reset, and can be  
25 used when a load is on a wagon to save unloading the same.

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

30 1. A felly tightener consisting of a right-and-left-threaded screw, two internally-threaded bars, two pairs of serrated clamping jaws, and two pairs of fastening or clamping bars, H,

attached to said bars by bolts and nuts, substantially as and for the purpose described.

2. In a felly-tightener, the combination, with 35 the right-and-left-threaded screw A and bars B, of the serrated plates E, bolts *f*, and nuts *g*, as herein shown and described.

3. In a felly-tightener, the combination, with a right-and-left-threaded screw A and bars B, 40 of the plates E, provided with groove *e*, and a serrated portion, *e'*, bolts *f*, and nuts *g*, substantially as herein shown.

4. The combination, with the screw A and bars B, of the fastening-bars H and bolts *h* *i*, 45 as herein shown and described.

5. In a felly-tightener, the combination, with the right-and-left-hand screw A, bars B, and clamping-jaws E, of the fastening or clamping 50 bars H and bolts *i* and *h* for securing the jaws E upon the felly, substantially as set forth and described.

6. The combination, with the screw A and bars B, of the straps D, provided with threads for the engagement of said screw, substantially 55 as herein described.

7. The combination, with bars B, of the cushions K, as shown and described, for the purpose specified.

ARCHIMEDES GALBRAITH.

Witnesses:

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J. W. GALBRAITH.