No. 665,602. Patented Jan. 8, 1901.

J. W. HAWKINS.

TIRE TIGHTENER.

(Application filed May 8, 1900.)

(No Model.)

Fig. 1.

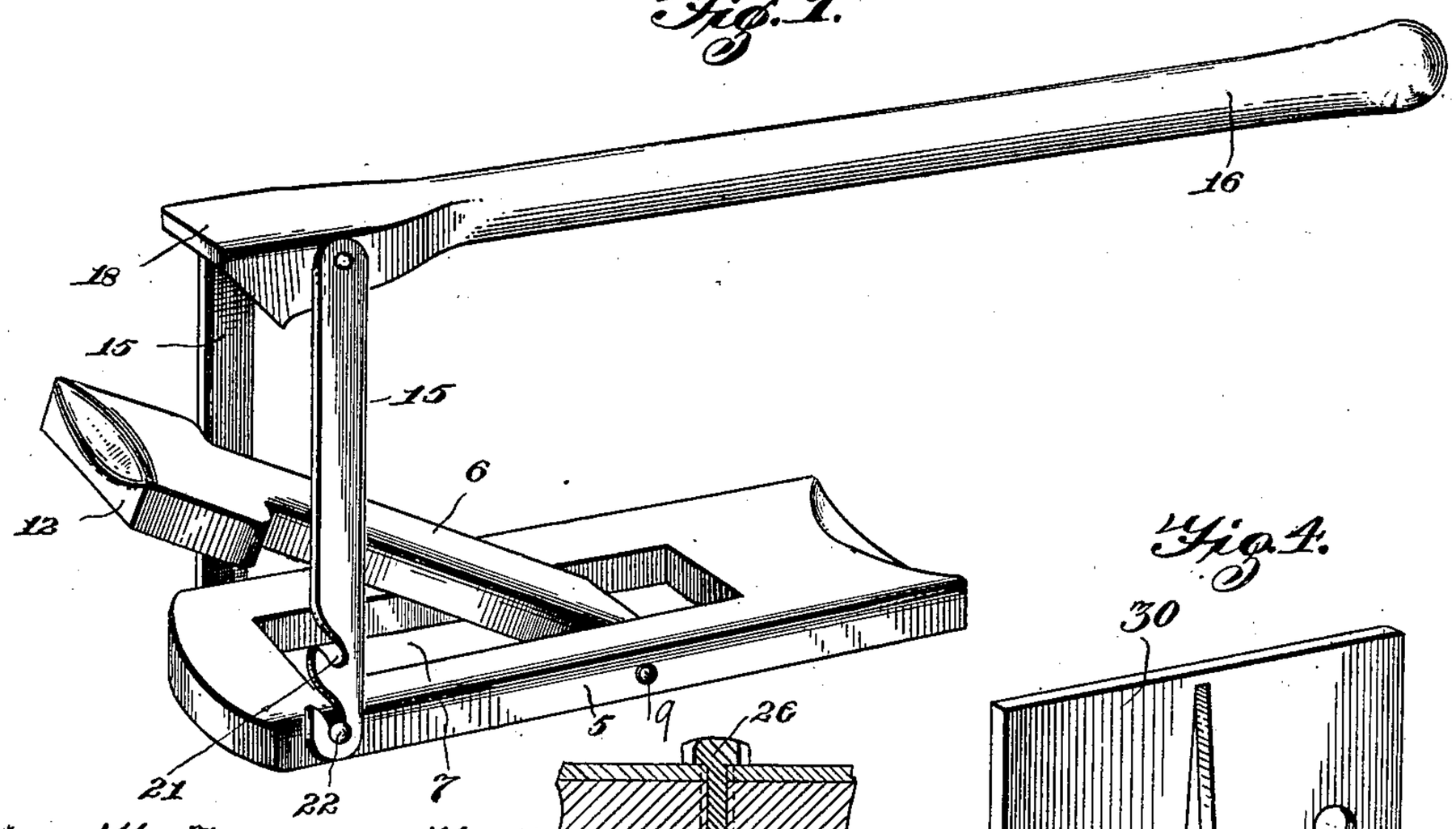


Fig. 4.

Fig. 3.

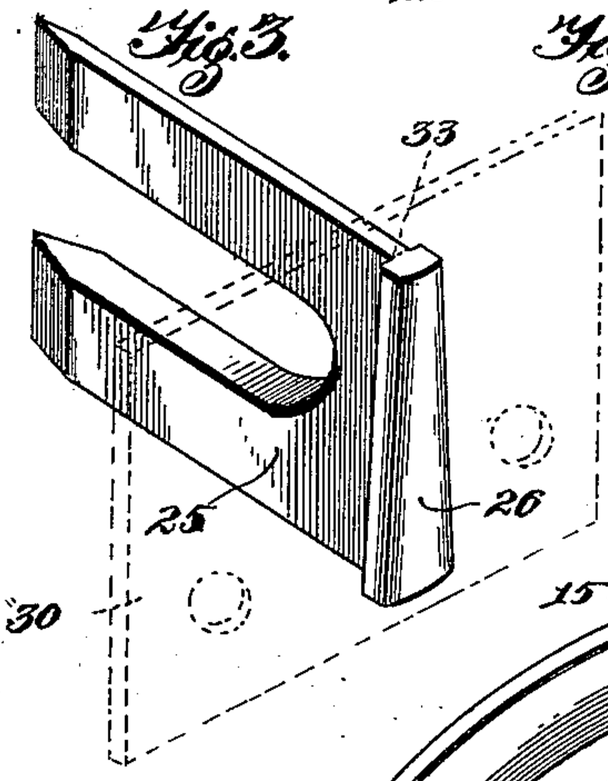


Fig. 5.

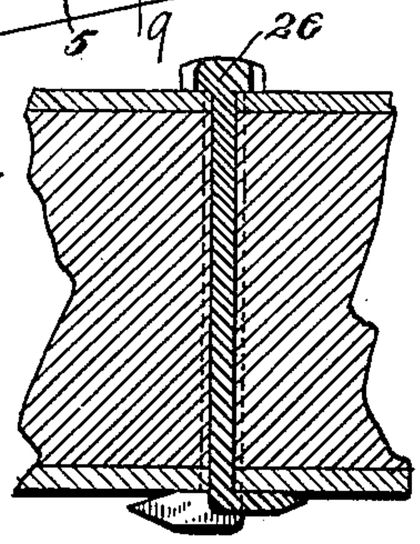
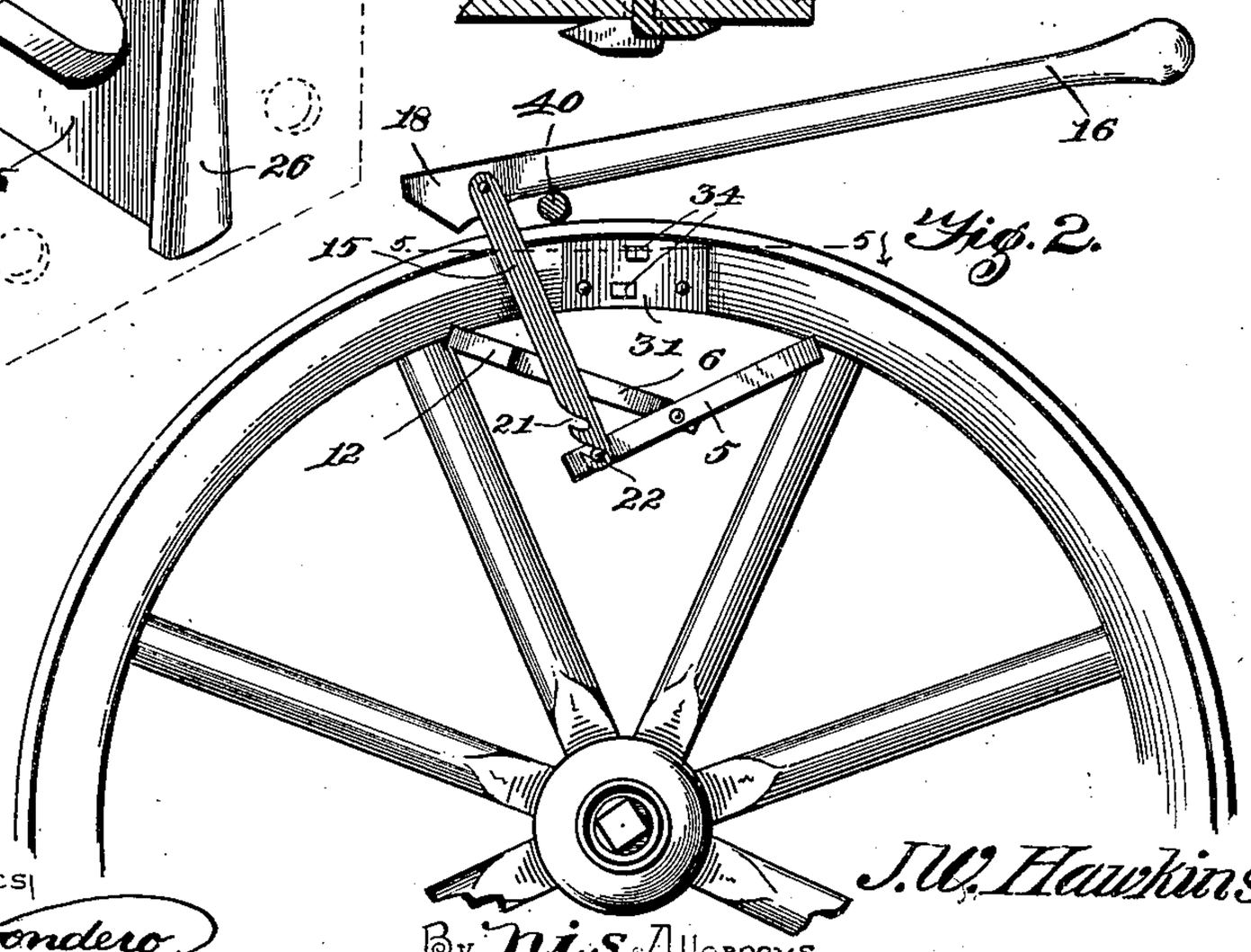


Fig. 2.



Witnesses:
Geo. H. Chandlee
Chas. Sondereo.

By Nis Attorneys.
J. W. Hawkins Inventor

UNITED STATES PATENT OFFICE.

JOHN W. HAWKINS, OF TYRO, ARKANSAS, ASSIGNOR OF TWO-THIRDS TO FATE McGUFFY AND WILLIAM F. PURYEAR, OF SAME PLACE.

TIRE-TIGHTENER.

SPECIFICATION forming part of Letters Patent No. 665,602, dated January 8, 1901.

Application filed May 8, 1900. Serial No. 15,929. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HAWKINS, a citizen of the United States, residing at Tyro, in the county of Lincoln and State of Arkansas, have invented a new and useful Tire-Tightener, of which the following is a specification.

This invention relates to devices for expanding the fellies of wheels, so that the metallic tires thereof may be caused to fit snugly thereon, the object of the invention being to provide a cheap and simple device of this nature wherein the parts will be arranged for adjustment to lie against the felly and between two of the spokes of the wheel and may be then operated to expand the felly and separate the ends of two adjacent sections thereof to permit the starting of a wedge which may be driven into place to hold the felly expanded and against the tire, thus eliminating the necessity of cutting the tire, which is customary.

In the drawings forming a portion of this specification, and in which like parts are indicated by like numerals of reference in the several views, Figure 1 is a perspective view of the felly-expanding tool. Fig. 2 is a side elevation showing a portion of a wheel and illustrating the position of the tool in operation and the application of the wedge. Fig. 3 is a perspective view of the wedge and incating the application of a holding-plate thereto. Fig. 4 is a perspective view of one of the felly-plates. Fig. 5 is a section on line 5 5 of Fig. 2 and showing the arrangement of the wedge and brace-plates.

Referring now to the drawings, the present invention consists, essentially, of a toggle-lever including two links 5 and 6, of which the link 5 has a longitudinal slot 7, which lies wholly within the inclosure of the sides of the link, and in this slot is disposed the end of the link 6, the link 6 being held pivotally in place by means of a pivot-pin 9, which is passed transversely through the links. The slot 7 is formed nearer one end of the link 5 than the other, and in operation the link 6 lies with its enlarged head 12 relatively close to this nearer end of the link 5 and its operative pivotal movement is toward and away from that end of the link 5. The upper face of the head of link 6 is beveled at its free end, this bevel being curved to fit against the inner surface of the wheel-felly and prevent displacement of the tool when in operation. That end of the link 5 which is farthest from the slot 7 is likewise beveled in a curve, so as to lie snugly against the inner surface of the felly. With this construction it will be seen that the unbeveled end of the link 5 projects beyond the pivotal connection of the links, and to opposite points of the sides of the projecting portion are pivoted connecting-rods 15, which lie on opposite sides of and pass beyond the link 6 and have their outer ends pivoted to opposite points of a hand-lever 16. The portion of the lever 16 to which the connecting-rods are pivoted is enlarged to form a head 18, and the lower face of this head is tapered to form a fulcrum edge 19.

In practice the connecting-rods, which are in the form of plates and are pivotally connected with link 5 by the engagement of slots 21 therein with headed pins 22 on the link 5, are disconnected from the link 5 and are adjusted to straddle the felly and tire of a wheel at a point of joining of two of the sections of the felly. The toggle-lever is then disposed between the spokes and below the lever 16, with the end of link 5 receiving the felly in its curved bevel, while the head of link 6 receives the felly in its curved bevel at a point on the opposite side of the line of connection of the felly-sections. The headed pins 22 are then engaged in the proper slots 21 to cause the lever 16 to lie flat against the tire, after which the lever may be raised upon its fulcrum and the toggle-links will be operated, the free ends of the links being forced outwardly and against the adjacent spokes, so that the felly-sections are separated. After the sections are separated to the proper extent a wedge may be driven into the interspace, and the felly will be held in this expanded condition to prevent displacement of the tire. The wedge which is preferably used is shown in Fig. 3 of the drawings and comprises a bifurcated stem portion 25, the ends of the bifurcations of which are tapered in the usual manner, this stem having a head 26 extending transversely of the rear end thereof, the wedge being in the form of a plate in or-

der to most effectively prevent return movement of the felly-sections. To prevent withdrawal of the wedge, there are employed two plates 30 and 31, which also act to hold the felly-sections against lateral displacement, one of these plates 30 having a transverse slot 33, which receives the wedge, and against which plate the wedge-head lies, the plate itself being brought to lie closely against a side face of the felly to cover the sides of the adjacent ends of the felly-sections. The second plate 31 has two openings 34 to receive the protruding ends of the bifurcations of the wedge, this plate lying against the felly and opposite to the plate 30. After the wedge is in place and the plates in proper positions bolts are passed through alining perforations in the plates and felly-sections, and the protruding ends of the bifurcations of the wedge are upset or riveted over to hold them in place. With this construction it will be seen that the felly may be effectively expanded and that the wedge may be then inserted and may be, in fact, driven up to further expand the sections, the plates 30 and 31 acting to hold the wedge firmly in place.

Modifications in the specific construction shown may be made and any suitable materials may be used without departing from the spirit of the invention. Furthermore, if desired, in the operation of the lever 16 a fulcrum 40 (shown in Fig. 2) may be introduced to lie between the lever and the tire of the wheel and against which the lever may be operated instead of upon its projecting edge.

What is claimed is—

1. A device of the class described comprising a toggle-lever including two links adapted to lie with their free ends against a felly, one of the links projecting beyond the pivotal connection of the links, additional links pivoted to the projecting portion of the toggle-link and a lever connected with the last-named links to lie against the outer face of the wheel-tire.

2. A device of the class described comprising a toggle-lever including two links, of which one projects beyond their pivotal connection, said links being adapted to lie with their outer ends against a felly, and a lever connected with the projecting portion for operating the lever to separate its outer ends.

3. A device of the class described comprising a toggle-lever including two links, of which one projects beyond their pivotal connection, said links being adapted to lie with their outer ends against a felly, headed pins upon the projecting portion of one of the links, and a lever having slotted links, said links being adapted to receive the pins in their slots, the links with the slots, passing at opposite sides of the second toggle-link.

4. A device of the class described comprising a toggle-lever including two links, of which one projects beyond their pivotal connection, said links being adapted to lie with their outer ends against a felly, and a lever adjustably connected with the projecting portion, to operate the toggle-lever to separate its ends and expand the felly.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN W. HAWKINS.

Witnesses:
A. O. COLLINS,
MOSES COLLINS.