(No Model.)

F. J. BOURN & W. R. HALE.

AXLE NUT WRENCH.

No. 560,339. Patented May 19, 1896.

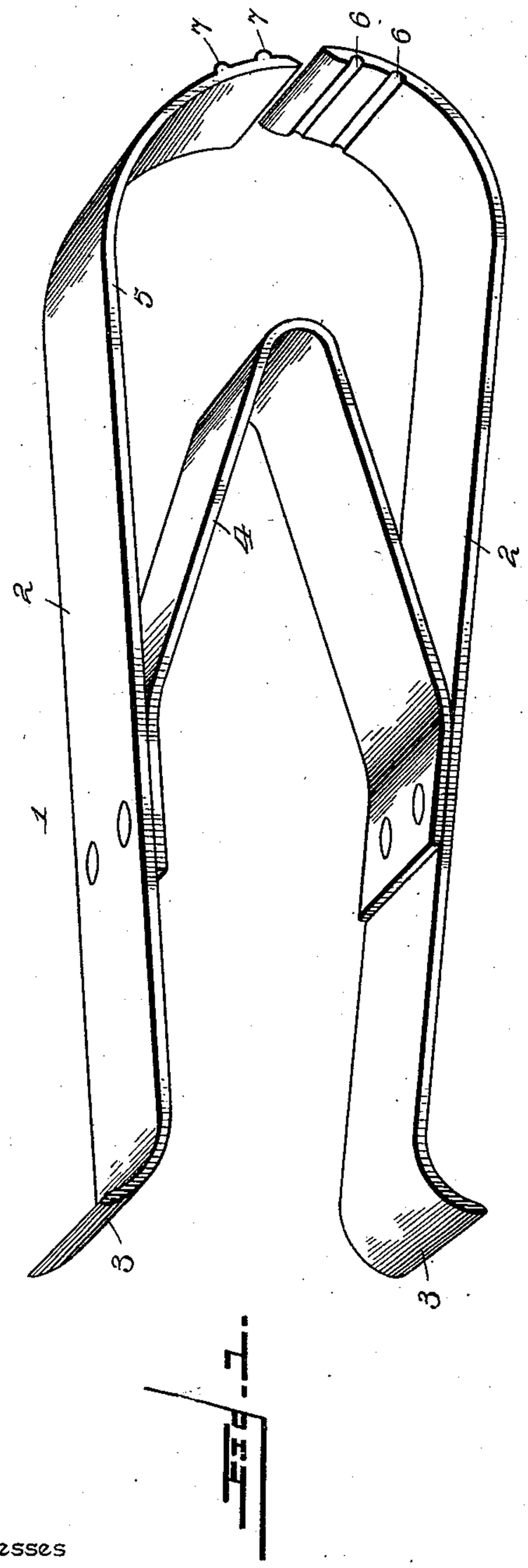

Fig. 1.

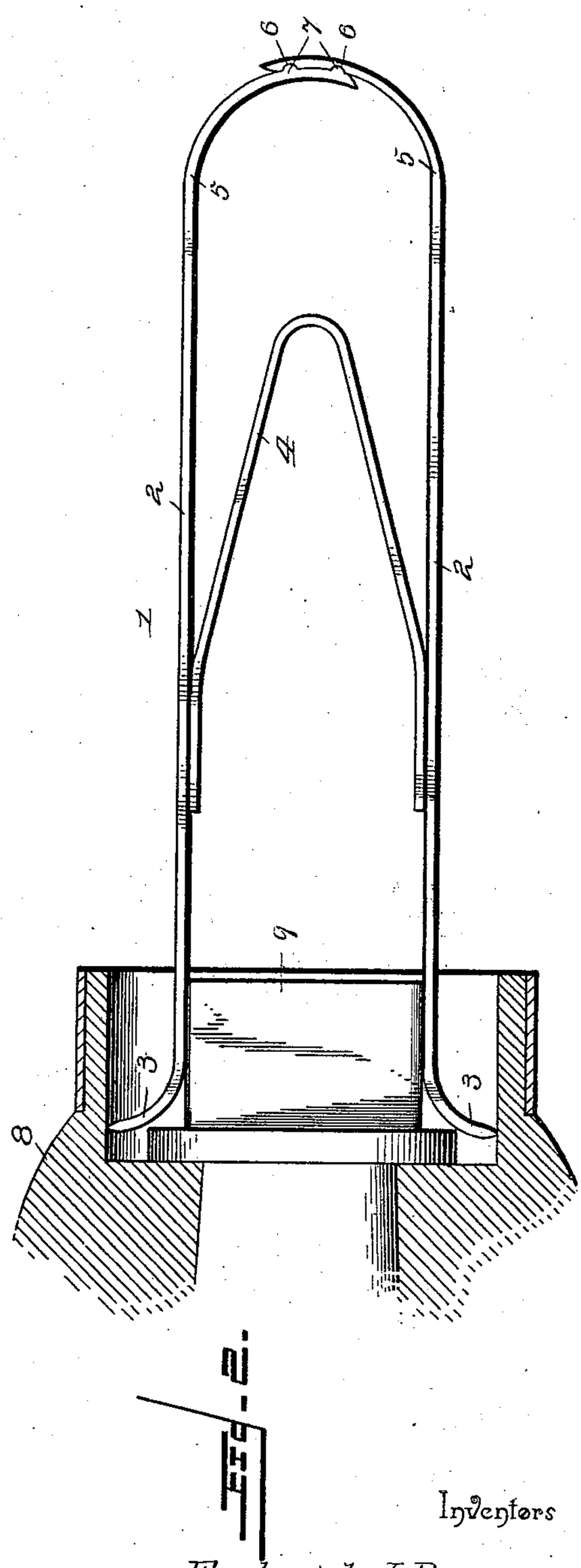

Fig. 2.

Witnesses
Thos. W. Riley.
J. F. J. Riley

Inventors
Frederick J. Bourn.
By their Attorneys, and William R. Hale.
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UNITED STATES PATENT OFFICE.

FREDERICK J. BOURN AND WILLIAM R. HALE, OF GUALALA, CALIFORNIA, ASSIGNORS TO SAID BOURN.

AXLE-NUT WRENCH.

SPECIFICATION forming part of Letters Patent No. 560,339, dated May 19, 1896.

Application filed October 30, 1895. Serial No. 567,422. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK J. BOURN and WILLIAM R. HALE, citizens of the United States, residing at Gualala, in the county of Mendocino and State of California, have invented a new and useful Axle-Nut Wrench, of which the following is a specification.

The invention relates to improvements in axle-nut wrenches.

The object of the present invention is to provide a simple and inexpensive device adapted to engage simultaneously the interior of a hub and an axle-nut and to hold the nut rigid with the wheel and to permit the latter to be rotated to turn the nut off the axle and to screw it thereon.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of an axle-nut wrench constructed in accordance with this invention. Fig. 2 is a side elevation, partly in section, showing the wrench in engagement with a hub and a nut.

Like numerals of reference designate corresponding parts in both the figures of the drawings.

1 designates a wrench composed of two sides or sections 2, having curved diverging engaging ends 3 and connected by a substantially V-shaped spring 4, which is adapted to hold the sides separated sufficiently to introduce their engaging ends into a hub. The sides of the spring are secured to the inner faces of the sides or sections 2 of the wrench at points a short distance from the engaging ends, and the apex of the spring is disposed rearwardly or inwardly toward the handle ends 5 of the sides or sections 2. The ends 5 are curved inward toward each other. One of the ends is provided on its inner face with transverse curves or notches 6, and the other side 2 is provided on the outer face of its end 5 with transverse ribs 7, adapted to engage the curves or notches 6 to lock the inner ends of the sides together to cause the ends 3 to engage a hub 8 and an axle-nut 9.

When the wrench is introduced in the outer end of a hub, the terminals of the engaging portion bear against opposite sides of the nut. When the sides are compressed, the nut is clamped and operates as a fulcrum to throw the terminals of the sides tightly against the inner face of the nut-band of the hub, thereby rigidly connecting the nut with the wheel. The wheel is adapted to be rotated to turn the nut on and off.

It will be seen that the wrench is exceedingly simple and inexpensive in construction, that it is positive and reliable in operation, and that the sides are capable of simultaneously engaging the interior of a hub and an axle-nut.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any advantages of the invention.

What we claim is—

1. An axle-nut wrench comprising similar sides having diverging engaging ends designed to be inserted within a hub and adapted to bear against opposite sides of a nut, and means for connecting the sides whereby their terminals are forced tightly against the interior of the hub and the axle-nut is tightly clamped, substantially as described.

2. An axle-nut wrench comprising opposite sides having curved diverging engaging portions adapted to bear against a hub and a nut, a substantially V-shaped spring interposed between the sides and secured to them, and means for connecting the sides, whereby they are locked in engagement with the nut and the hub, substantially as described.

3. An axle-nut comprising sides having diverging engaging portions designed to be inserted in the end of a hub, one of the sides having its other end provided with transverse curves or notches, and the corresponding end of the other side being provided with transverse ribs adapted to engage the notches or curves, whereby the sides are locked together, and a spring interposed between the sides, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

FREDERICK J. BOURN.
WM. R. HALE.

Witnesses:
A. R. TARWATER,
B. P. WILBER.