D. W. COPELAND.

TIRE-UPSETTER.

No. 182,170. Patented Sept. 12, 1876.

Fig 1

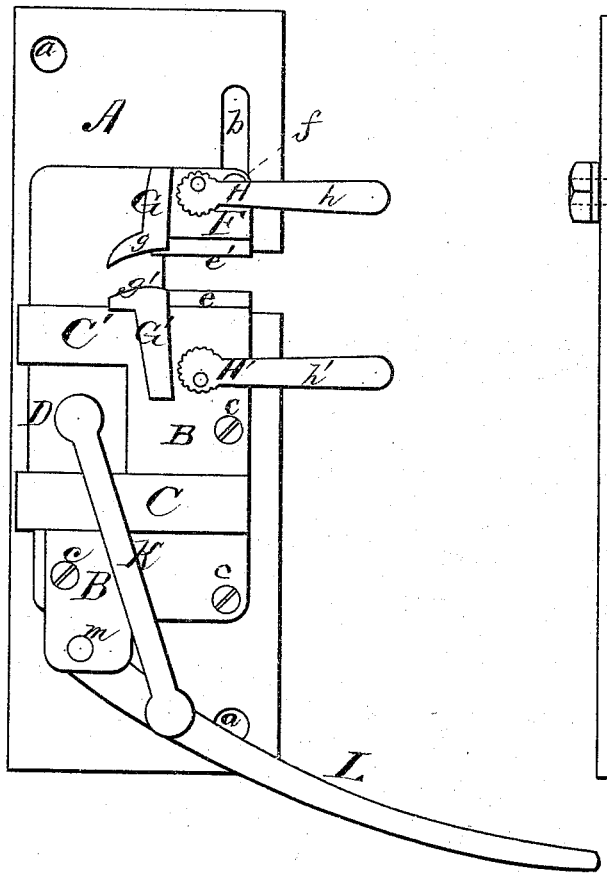
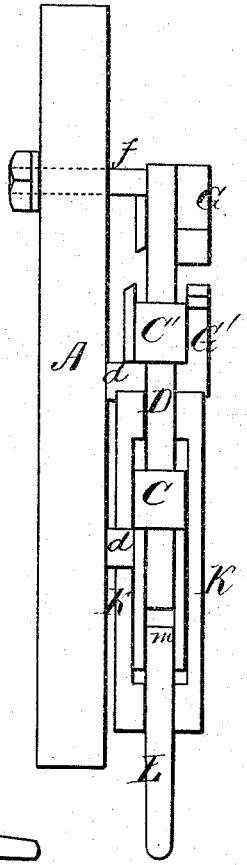


Fig 2



WITNESSES

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DAVID W. COPELAND, OF THERESA, NEW YORK.

IMPROVEMENT IN TIRE-UPSETTERS.

Specification forming part of Letters Patent No. **182,170**, dated September 12, 1876; application filed July 29, 1876.

To all whom it may concern:

Be it known that I, DAVID W. COPELAND, of Theresa, in the county of Jefferson and State of New York, have invented a new and valuable Improvement in Tire-Upsetter, Shear, and Benders; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of my invention. Fig. 2 is a rear side view of the same.

This invention has relation to means for cutting and upsetting the tires of wheels; and it consists mainly in the construction and novel arrangement of the bending and upsetting jaws, the upset clamps and shears, the right-angle slide and the link or toggle-lever, as hereinafter shown and described.

The object of this invention is to provide a machine whereby, with the same lever and motion thereof, a tire may be cut, bent, or upset, as may be required.

In the accompanying drawings, the letter A designates the base or back plate of the machine, which is designed to stand upright by whatever it is secured to. It is provided with screw-holes *a a* and slot *b*. B represents the body of the stationary jaw, which is bolted to the back A, as shown at *c c*, and usually separated from said back by transverse supporting-blades or ribs *d*. C C′ are loops which are formed on or secured to the body B, and extend backward horizontally to embrace the shank of the movable jaw.

To the upper end of the body B, on the inside, is secured the rigid or stationary jaw *e* of the shears, a bed or seat for which may be arranged on the inside end of the upper loop C′. D represents the shank of the movable jaw, which extends along at the back of the body-piece B, and is embraced by the loops C C′. Its upper end is bent at a right angle, to overhang the upper end of said body-piece, and is armed on the inside of its overhanging end F with a shear-jaw, *e′*, which is arranged to operate with its fellow *e* of the stationary jaw when the two are brought together.

At the end of the branch F of the shank D a guide-bolt, *f*, is secured, and, extending through the slot *b* of the back plate, serves to keep the movable jaw to its work during the cutting operation.

On the face of the arm or branch F of the movable jaw is formed or secured an upset arc or buttress, G, extending in the line of motion of the jaw, and ribbed or serrated transversely on its inner side. Its lower end is extended laterally, to form the concave bending clamp-jaw *g*.

On the face of the rigid shank or body-piece B, at its upper end and in line with the arc G, is formed or secured a similar arc or buttress, G′, and at its upper end a convex bending clamp-jaw, *g′*, is located.

When the shank D is brought down the forward clamp-jaw is designed to move toward the latter, and gripe the tire firmly where it is to be bent. Opposite the respective upset-arcs G G′ are pivoted the eccentric serrated cams H H′, respectively, to the movable and rigid shanks. These are provided with handles *h h′*, whereby they may be quickly turned to gripe the tire against the arcs G G′, before the jaw D is brought down to upset the same.

At or about the middle of the body of the movable shank D are pivoted the upper ends of two cheek-links or toggle-bars, K, the other ends of which are pivoted to the lever L, at a short distance from its fulcrum *m*, at the lower end of the body-piece B. These cheek-links pass on each side of the body-piece B, and are so arranged that when the jaws are brought together they are in line, or nearly in line, with the lever and its fulcrum.

This toggle construction is designed to exercise power in a great and increasing ratio as the stroke of the lever progresses, and it is designed to work efficiently in the operations above described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combined tire, upset-shears, and bender, having the body-piece B and slide D, armed, respectively, with the upsetting arcs G

G′, the bending-jaws, serrated cams, and shears, substantially as specified.

2. The combination, with the right-angle side shank D and its bending, upsetting, and shear jaw, of the rigid body-piece B, its bending, upsetting, and shear jaw, the loops C C′, and the toggle-lever K L, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

D. W. COPELAND.

Witnesses:
RICHARD RODENHURST,
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