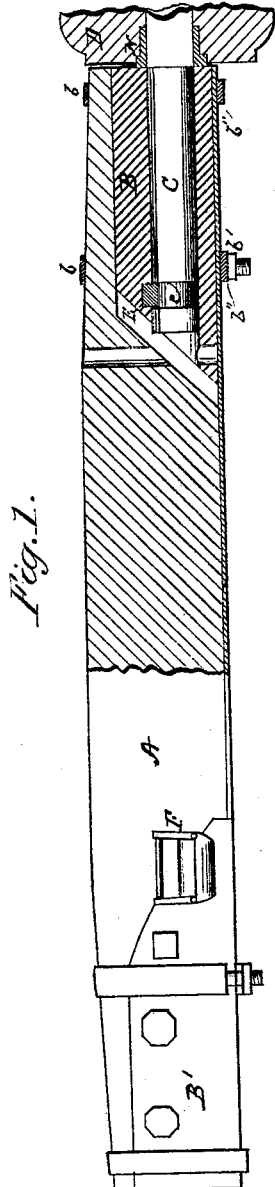


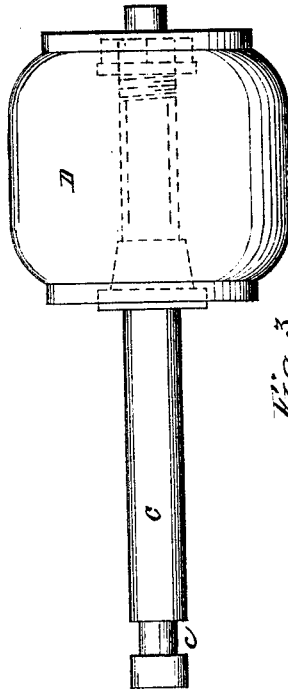
J. M. STONE.  
VEHICLE-AXLE.

No. 183,079.

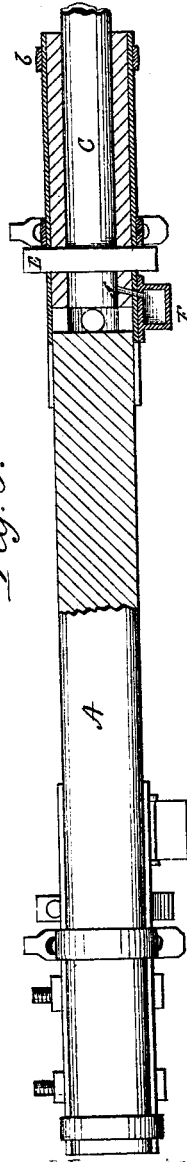
Patented Oct. 10, 1876.



*Fig. 1.*



*Fig. 2.*



*Fig. 3.*

*Witnesses*

*S. P. Holloway*  
*W. P. McWilliams*

*Inventor*

*James Micajah Stone*

# UNITED STATES PATENT OFFICE.

JAMES M. STONE, OF CALAMINE, ARKANSAS.

## IMPROVEMENT IN VEHICLE-AXLES.

Specification forming part of Letters Patent No. **183,079**, dated October 10, 1876; application filed June 12, 1876.

*To all whom it may concern:*

Be it known that I, JAMES MICAJAH STONE, of Calamine, county of Sharp, State of Arkansas, have invented a new and useful Improvement in Wagon Axle or Carriage, &c., which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents an axle in side elevation, partially broken away, with my improvements attached. Fig. 2 shows the hub in position. Fig. 3 is a top or plan view, partially in section.

My invention relates to the construction of axles partly of wood and partly of metal; and it consists in the combination of devices hereinafter explained and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe the exact manner in which I have carried it out.

In the drawings, A represents an axle; B, the boxes; C, the spindle, attached to the hub D, and fitting in the box B. The spindle is provided with the groove *c*, through which passes the key E, to secure it in position in the box, as shown in Fig. 3. Opposite to the rear end of each spindle is secured the lubri-

cating-box F, with the diagonal passage *f*, to convey the lubricant to the spindle, as shown in Fig. 3. The boxes are secured in position in the ends of the axles by means of the loops *b*, and screw-nuts *b'*, and tie-pieces *b''*.

The different parts described may be made of any suitable metal, the casings B', covering the boxes and extending below the axle its entire length, being constructed of copper. The extension of the bottom of these copper casings, so as to form one continuous copper plate on the under side of the axle, gives the latter a strength and power of endurance believed to be new.

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

A vehicle-axle consisting of the wooden axle A, provided with the boxes B, lubricating-boxes F, and diagonal passages *f*, the united copper casings B', spindle C, having the groove *c*, and key E, all constructed to operate substantially as described.

JAMES MICAJAH STONE.

Witnesses:

S. P. HOLLOWAY,  
W. T. M. WILLIAMS.