

(No Model.)

L. D. CLARK.

AXLE BOX.

No. 386,525.

Patented July 24, 1888.

Fig. 1.

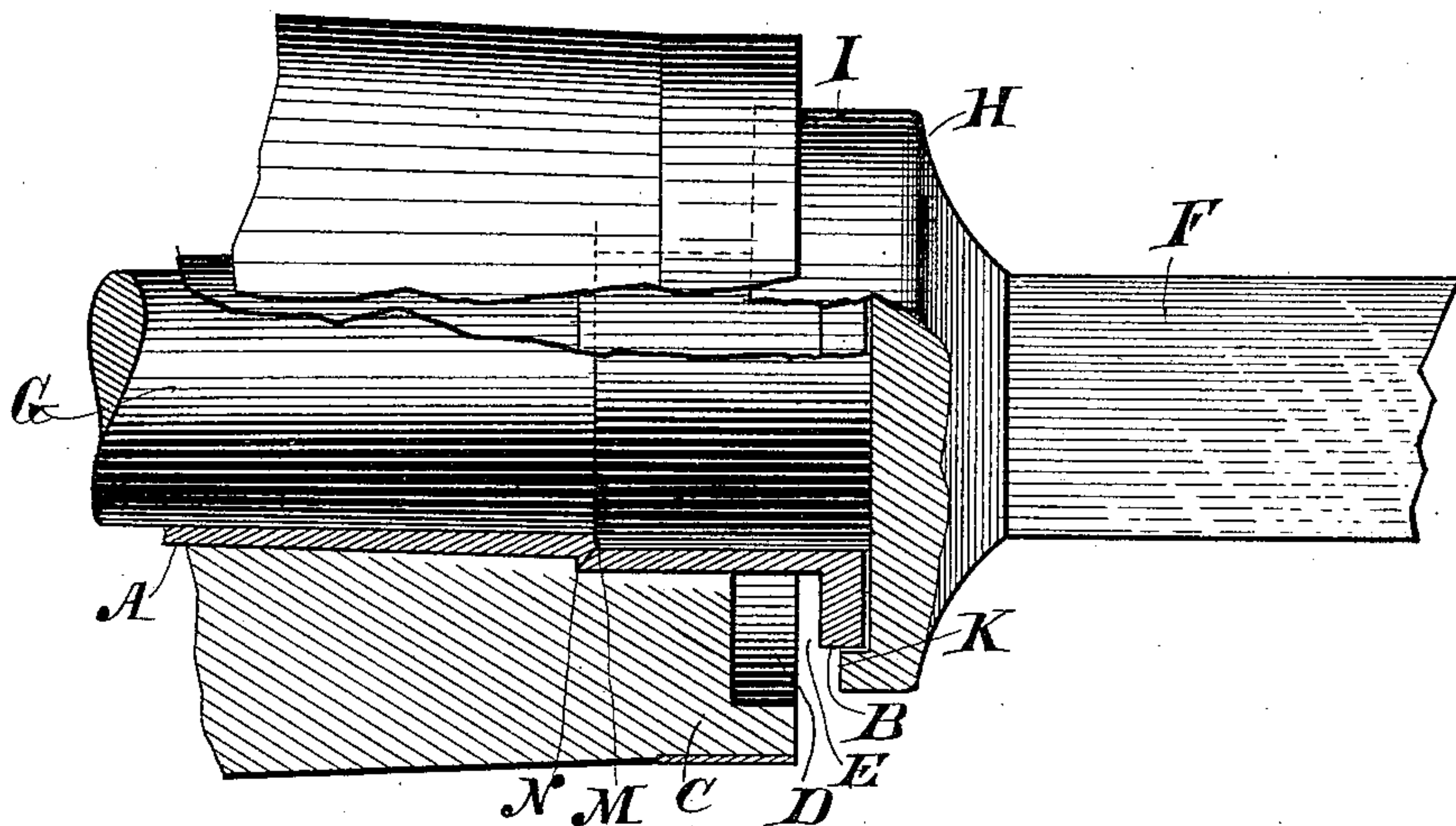


Fig. 2.

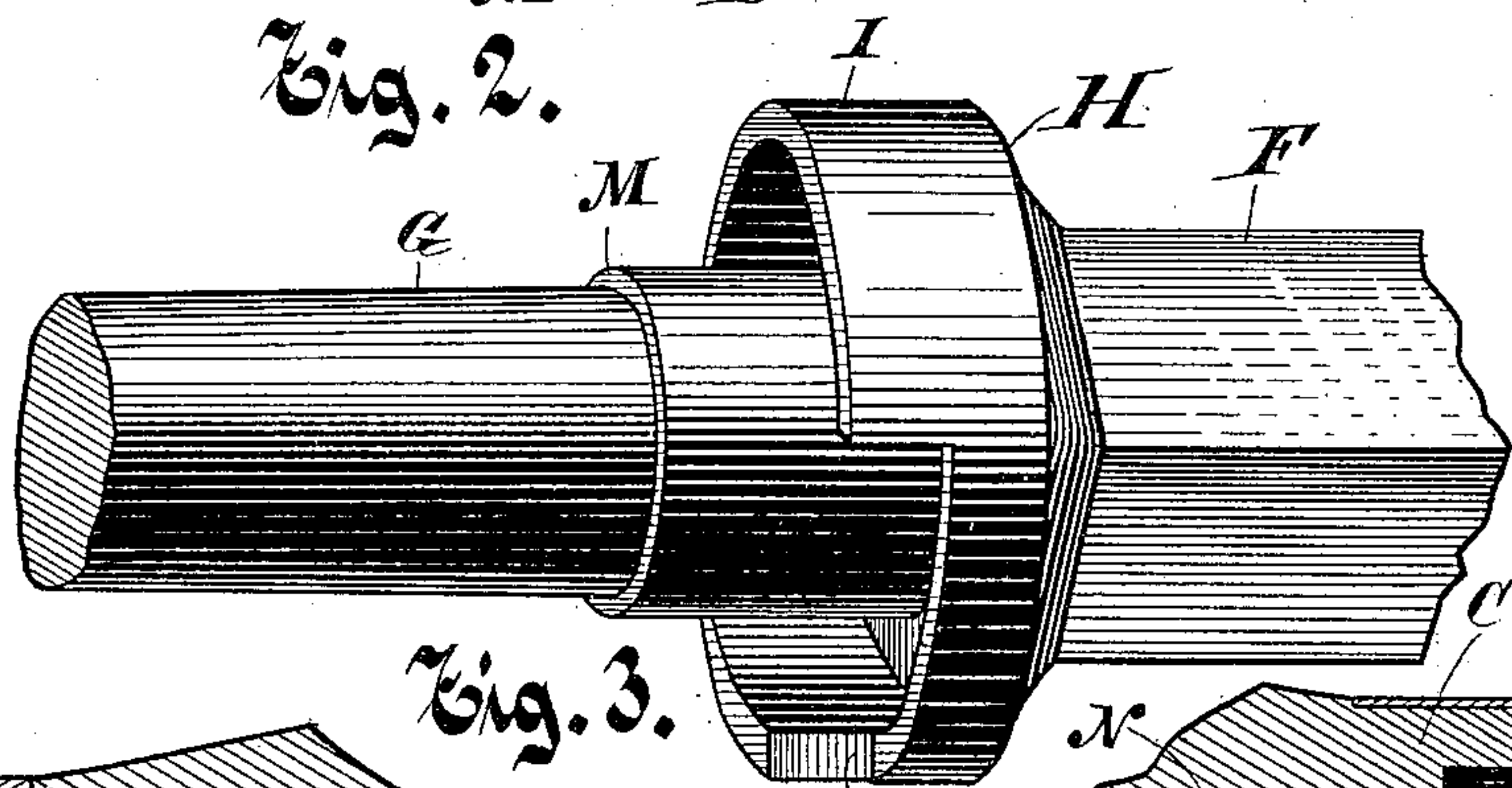
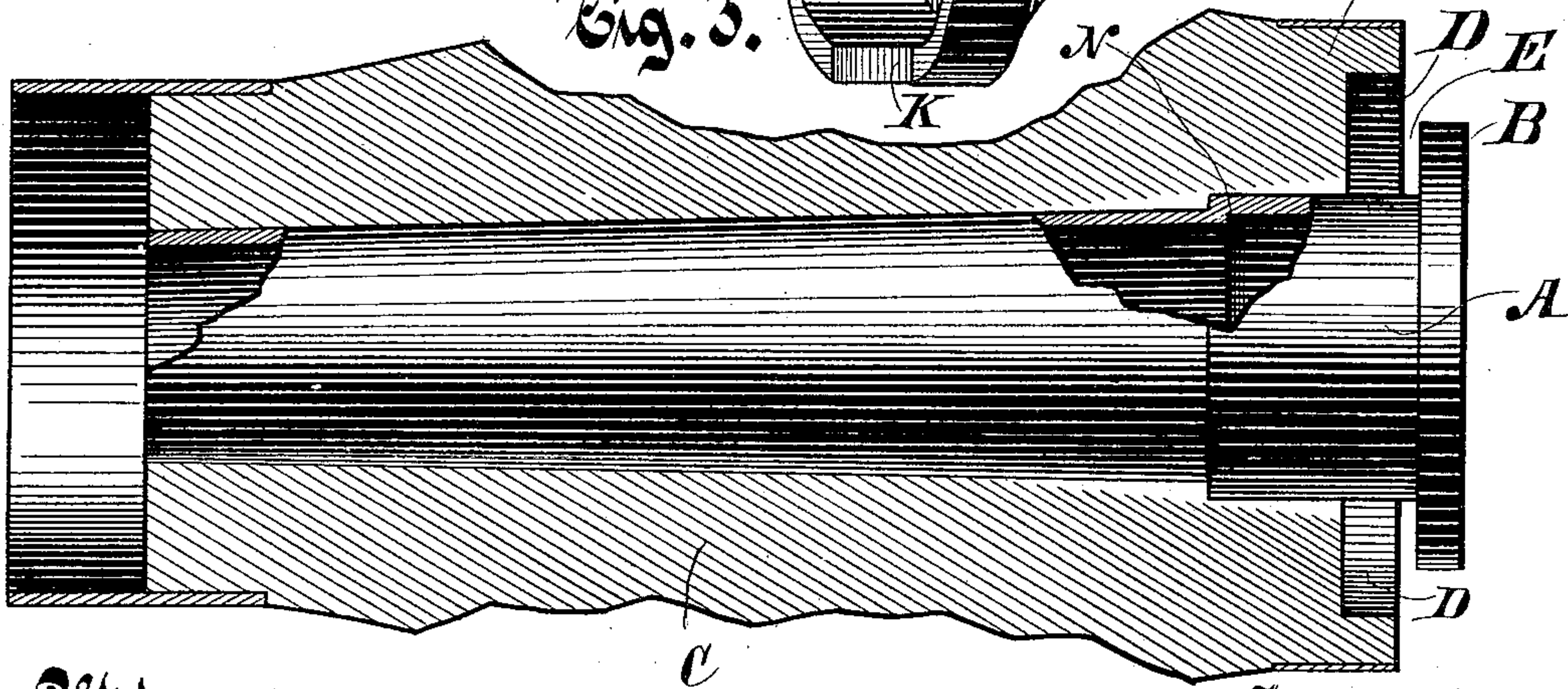


Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

LORENZO D. CLARK, OF STOUGHTON, WISCONSIN.

## AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 386,525, dated July 24, 1888.

Application filed November 25, 1887. Serial No. 256,072. (No model.)

*To all whom it may concern:*

Be it known that I, LORENZO D. CLARK, of Stoughton, in the county of Dane and State of Wisconsin, have invented new and useful Improvements in Axles and Axle-Boxes; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

Heretofore axles and axle-boxes have been constructed, which axle-boxes, being inserted in the hub of a wheel, formed a proper bearing for the rotation of the wheel on and about the axle, and by means of various supplemental mechanism attached to the hub and to the axle sand-excluding devices have been constructed; and my invention consists in the peculiar construction of the axle-box and the axle, whereby I provide both for the proper bearing of the wheel on the axle, and also a sand-excluding device at the rear of the hub, the combined devices being constructed in two parts only, which two parts are made complete and integral individually.

In the drawings, Figure 1 is a view, part in elevation and part in section, showing the form and method of construction of my combined device. Fig. 2 is a perspective of a portion of an axle, showing the form of the construction of that portion of it which has so much of my newly-invented device as is constructed integral with the axle. Fig. 3 is a central vertical section of the hub of a carriage-wheel with my newly-invented axle-box inserted therein, parts being broken away to show the interior.

The same letters refer to like parts in all the views.

The axle-box A is a hollow metal tube inserted rigidly in the hub C, and is provided on its inner end with an outwardly-extending flange, B. The inner end of the hub C is provided with a circular recess, D, slightly larger in diameter than the diameter of the flange B, and the axle-box is of such length and the flange B is so located with reference to the hub C that there is a channel or groove, E, formed about the axle-box between the inner surface

of the flange B and the end of the hub at the bottom of the recess D. The solid metal axle F, usually constructed of steel, having the cylindrical part G for the support and bearing of the axle-box A, is provided at the inner end of said cylindrical bearing with a shoulder, H, made integral with the axle and projecting outwardly therefrom, which shoulder is also provided with a circular flange, I, projecting inwardly therefrom, which flange is of proper diameter and projection to extend, when the hub is on the axle, about and beyond the flange B, within and nearly to the bottom of the recess D, except that on the lower side of the axle the flange I is provided with a recess, K, so that on the lower side of the axle, as connected to the vehicle, the existing portion of the flange I projects only far enough to overlap the edge of the periphery of the flange B and to leave the channel E entirely open downwardly, as seen in Fig. 1. It will be understood that this shoulder H, constructed integral with the axle F and provided with the flange I, in connection with the axle-box A, provided with the flange B, so inserted in the hub as to form the channel E, constructs a sand or dust excluding device, whereby very few particles of grit can enter the channel or groove E, and such as do get into that groove will ultimately fall out through the recess K, so that no grit is likely to pass over the flange B and get upon the bearings between the axle and axle-box. The axle F is provided with a shoulder, M, and the axle-box is provided with a corresponding shoulder, N, adapted to prevent an endwise movement of the hub upon the axle.

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

An axle-box having at its inner end an outwardly-projecting flange integral therewith, which axle-box is inserted and secured in a hub provided with a recess at its inner end about the box, the box being so inserted in the hub as to form a channel or chamber about the axle-box between the flange and the bottom of the recess in the end of the hub, in combination with an axle having a shoulder thereon and integral therewith, which shoulder has a circular flange of proper size to receive the

flange of the box, and which flange integral with the axle projects around and beyond the flange on the axle-box nearly to the bottom of the recess in the inner end of the hub, which  
5 axle-flange is provided in its under side with a recess, K, beyond the flange on the box and only opposite to the chamber formed between the flange on the box and the bottom of the

recess in the end of the hub, substantially as described. 10

In testimony whereof I affix my signature in presence of two witnesses.

LORENZO D. CLARK.

Witnesses:

L. K. LUSE,

B. E. WAIT.