

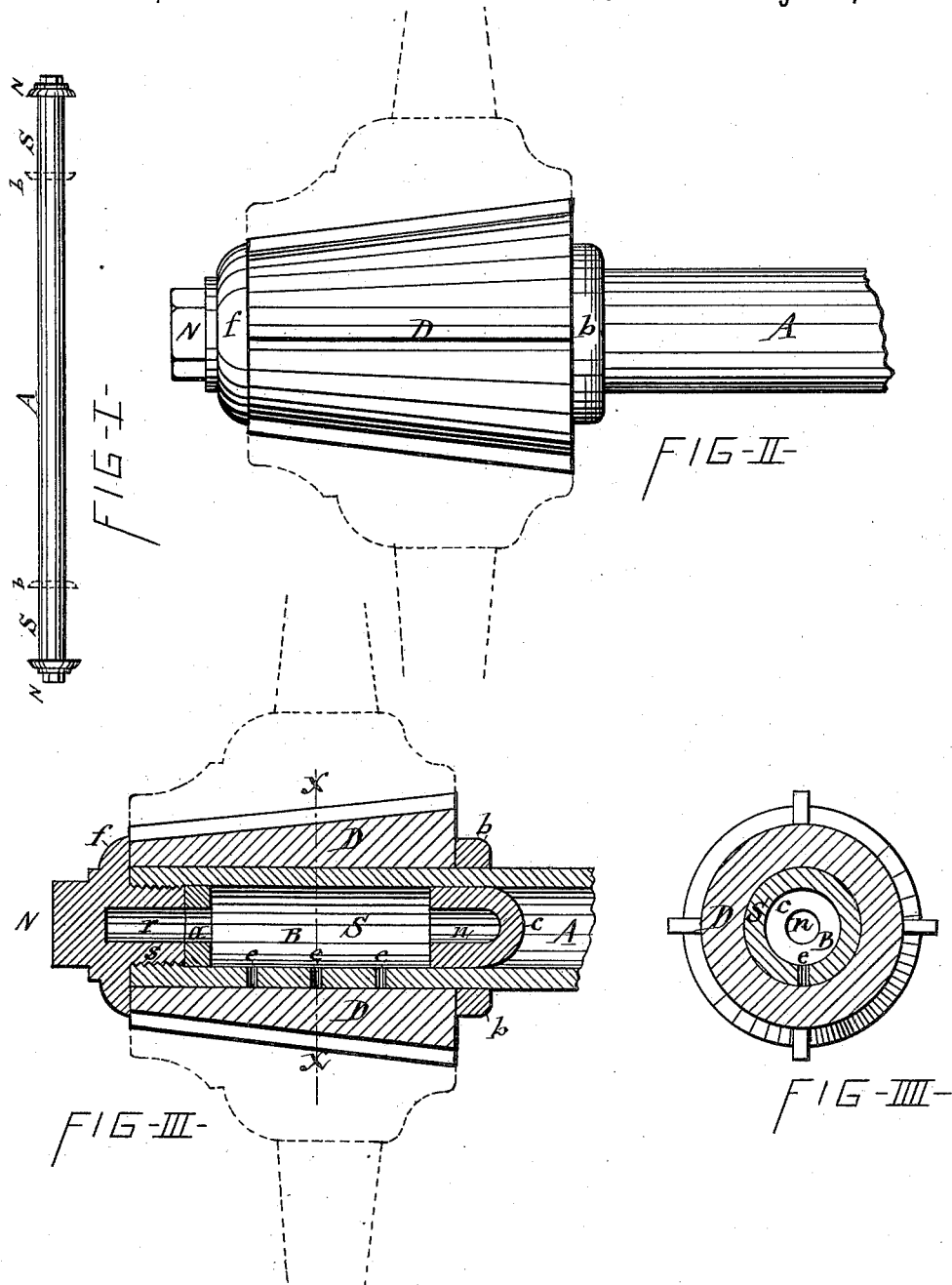
(No Model.)

E. PECKHAM.

TUBULAR AXLE.

No. 302,864.

Patented July 29, 1884.



WITNESSES

C. Bendixson

Wm. C. Raymond

INVENTOR.

Edgar Peckham

per Atty. L. A. S. & Co.
his Atty.

UNITED STATES PATENT OFFICE.

EDGAR PECKHAM, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF TO
JAMES M. WARD, OF SAME PLACE.

TUBULAR AXLE.

SPECIFICATION forming part of Letters Patent No. 302,864, dated July 29, 1884.

Application filed April 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDGAR PECKHAM, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Tubular Axles, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to axles formed of metal tubes and with straight cylindrical spindles, and has special reference to such of said axles as have their spindles perforated to render them self-lubricating.

The invention consists in the combination, with the aforesaid axle, of a ring secured to the interior thereof, and serving as a jamb or abutment for the inner end of the screw-plug, which enters the spindle, and has on its outer end a flange for retaining the wheel on the spindle, said ring also forming a dam, which prevents the oil from running out of the spindle while the aforesaid screw-plug is removed.

The invention also consists in providing the aforesaid screw-plug and the usual plug at the inner end of the spindle with an axial cavity for the purpose of augmenting the capacity of the lubricant-reservoir in the axle, all as hereinafter more fully described, and specifically set forth in the claims.

The invention is fully illustrated in the annexed drawings, wherein Figure I is a side view of my improved axle. Fig. II is an enlarged side view of one of the end portions of the axle with the boxes applied thereto. Fig. III is a longitudinal section of the same, and Fig. IIII is a transverse section on line *x x* in Fig. III.

Similar letters of reference indicate corresponding parts.

A represents the tubular metallic axle, which, together with its spindles *S S*, I form of a single piece of wrought-metal tubing of uniform size throughout its length. The usual collars, *b*, I shrink on or otherwise rigidly attach to the axle, at the inner end of the spindles, to form the abutment for the inner end of the wheel-hub, the opposite end of said hub abutting against the flange *f* of the nut *N*, which latter I form with an externally-screw-threaded plug, *s*, which enters the end of the

axle, and engages with screw-threads on the interior thereof, as shown in Fig. III of the drawings. To the interior of the axle I fasten a partition in the form of a plug, *c*, at or near the inner end of the spindle, and also a ring or collar, *a*, at or near the outer end of the spindle. Said ring is arranged in such position as to form a jamb or abutment for the inner end of the screw-plug *s*, and thus prevent the oil from oozing out between said plug and the spindle, and also prevent the oil from escaping from the axle while the plug *s* is removed. The plug *c* and ring *a* constitute dams, forming between them a reservoir, *B*, for lubricant, which is allowed to gradually escape from said reservoir through perforations *e e* in the bottom portion of the spindle *S*, the axial bearing of the box *D*. By inserting cotton waste in the reservoir *B* excessive flow of the lubricant is prevented. The oil and waste can be readily introduced through the ring *a* by removing the screw-plug *s*. This screw-plug I form with a cavity, *r*, thereby lightening the same and enlarging the reservoir, and for the same purpose I provide the plug *c* with a similar cavity, *n*, as illustrated in Fig. II of the drawings.

By making the box *D* tapering on its outside, as shown, a wheel-hub of the usual size and shape can be used to impart to the wheel the same appearance as those used in connection with heavy, stout axles, and the said box is adapted to be driven into the hub and fastened thereto in the usual manner.

Having described my invention, what I claim as new is—

1. The within-described axle and its spindles, formed of a single piece of wrought-metal tubing of uniform size throughout its length, and having its spindles perforated, and provided at their inner end with a partition and at their outer end with a ring secured to the interior of the spindle, substantially as described and shown.

2. The combination, with the tubular axle having perforated spindles, of a partition at the inner end of the spindle, a ring secured to the interior of the spindle, near the outer end thereof, and the wheel-retaining nut formed with an externally-screw-threaded plug enter-

ing the spindle and abutting against the aforesaid ring, substantially in the manner specified and shown.

3. The combination of the tubular axle provided with perforations *e e*, the plug *c*, provided with the cavity *n*, the ring *a*, and the screw-plug *s*, provided with the cavity *r*, said cavities constituting extensions of the lubricant-reservoir, substantially in the manner
10 specified and shown.

In testimony whereof I have hereunto signed my name and affixed my seal, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 24th day of March, 1884.

EDGAR PECKHAM. [L. s.]

Witnesses:

FREDERICK H. GIBBS,
C. BENDIXON.