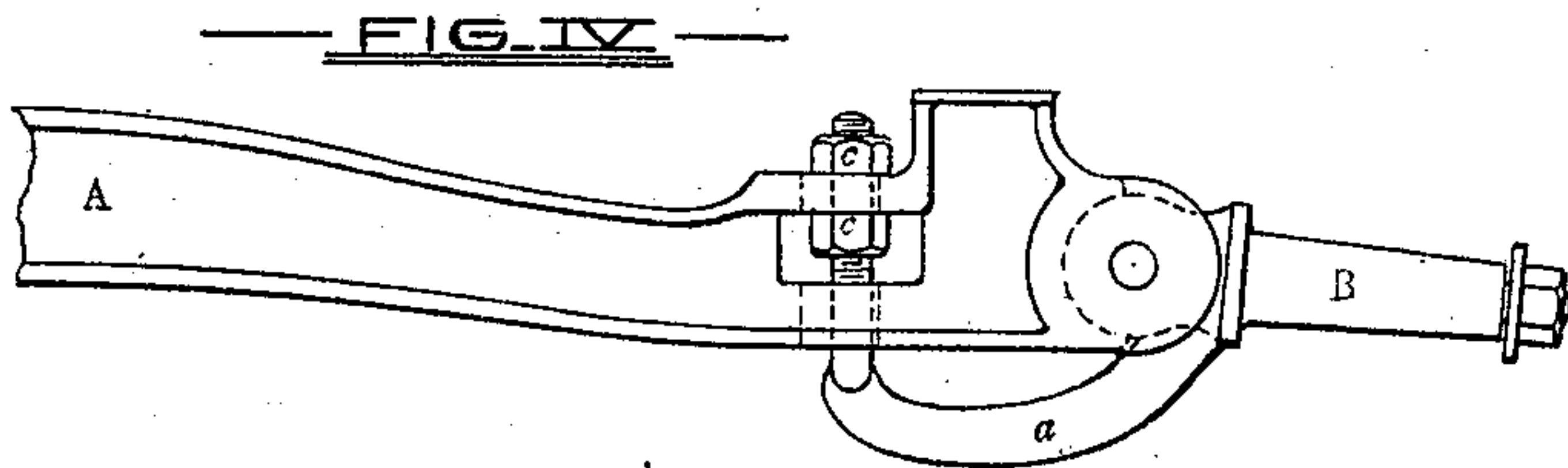
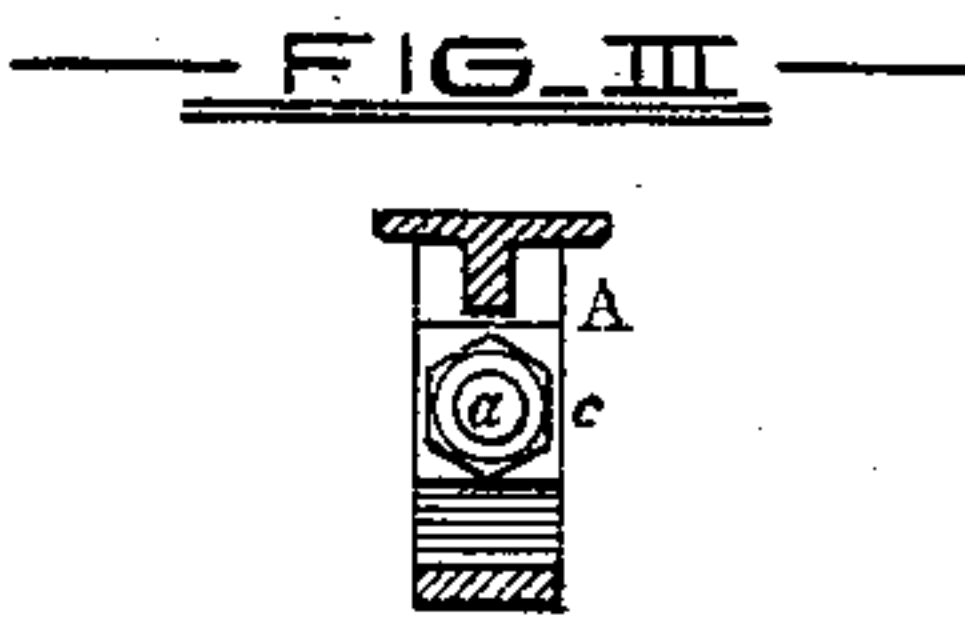
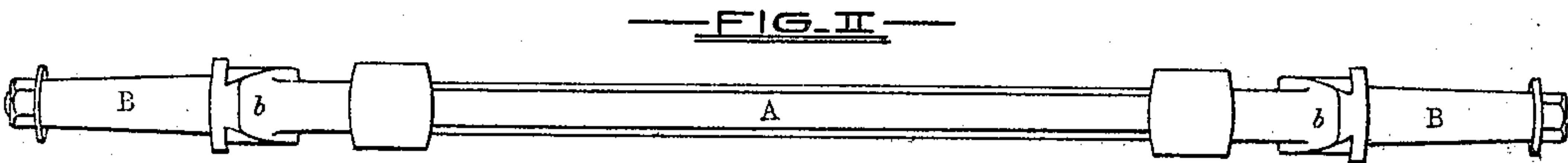
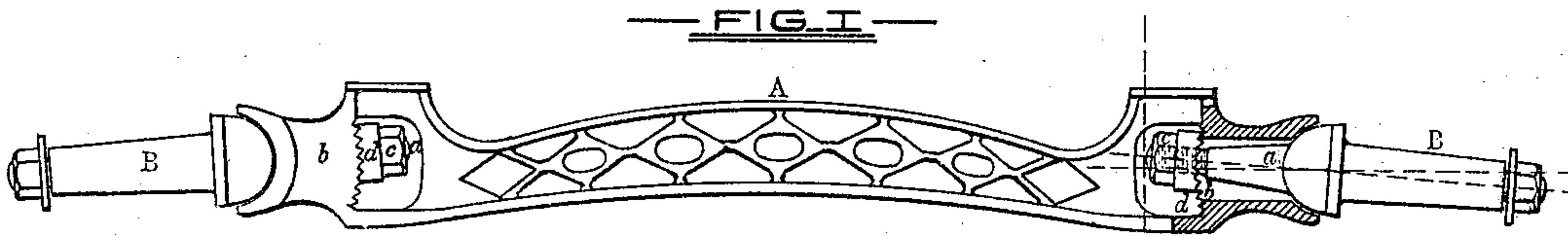


J. H. De VALIN.
AXLES.

No. 181,647.

Patented Aug. 29, 1876.



— WITNESSES —

Wm. H. Towson
W. H. Wharton

— INVENTOR —

John H. De Valin
by G. H. W. Howard
Atty.

UNITED STATES PATENT OFFICE.

JOHN H. DE VALIN, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN AXLES.

Specification forming part of Letters Patent No. **181,647**, dated August 29, 1876; application filed August 12, 1876.

To all whom it may concern:

Be it known that I, JOHN H. DE VALIN, of the city of Baltimore and State of Maryland, have invented certain Improvements in Axles, of which the following is a specification; and I do hereby declare that in the same is contained a full, clear, and exact description of my said invention, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention relates to an axle, the distinguishing features whereof consist in that the arms or parts of the axle upon which the wheels revolve are constructed to be readily detached from the main portion or body of the same, and adapted to be vertically adjustable with reference to the said body of the axle and the vehicle to which it is connected.

In the description of an axle embodying my improvements, which follows, due reference must be had to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a side view of the improved axle, partly in section; Fig. 2, a top view of the same; Fig. 3, a cross-section of the axle, on line *x y*, and Fig. 4 a side view of parts of the axle, modified in construction.

Similar letters of reference indicate similar parts in all the figures.

A is the main portion or body of the axle, and B the arms, connected to the body in such manner as to be easily and readily detached therefrom. To admit of this detachment the arms are provided with the shanks *a*, which are inserted in the sockets *b* in the ends of the body, and secured by means of the nut and washers, represented respectively by *c* and *d*. The adjustability of the arms B is obtained by constructing the shanks and sockets of such relative widths as will admit of a vibratory movement of the arms, and by removing a portion of the web of the body, to allow of a corresponding movement of the

nuts and washers. The inner surfaces of the washers *d* are serrated or toothed, and thereby adapted to interlock with the similarly serrated faces of the body surrounding the sockets *b* at any point within the limit of their vibratory movement.

In Figure 4, the manner of attaching the arm to the body of the axle differs from that shown in Figs. 1, 2, and 3, in that the adjustment of the said arm through the medium of the shank thereof is obtained by the movement of the nuts longitudinally of the shank, the said nuts having fixed positions with reference to the body of the axle.

The arms being detachable, their replacement, when broken or bent, is readily accomplished, and that without interference with the connection between the body of the axle and the vehicle, while the adjustability of the arms admits of their being set to give the required swing to the wheels.

Having thus described my invention, what I claim as new, and wish to secure by Letters Patent of the United States, is—

1. The detachable arm B, combined with the body A of the axle in such manner as to admit of its vertical adjustment with reference to the longitudinal center line of the said axle, substantially as shown.

2. In combination with the arms B, having the shanks *a* projecting therefrom, and body A, socketed at the ends thereof, as shown, the washers *d* and nuts *c*, the said washers and body having their opposing surfaces provided with teeth or serrations, substantially as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my name this 10th day of August, A. D. 1876.

JNO. H. DE VALIN.

Witnesses:

WM. T. HOWARD,
THOS. MURDOCH.