

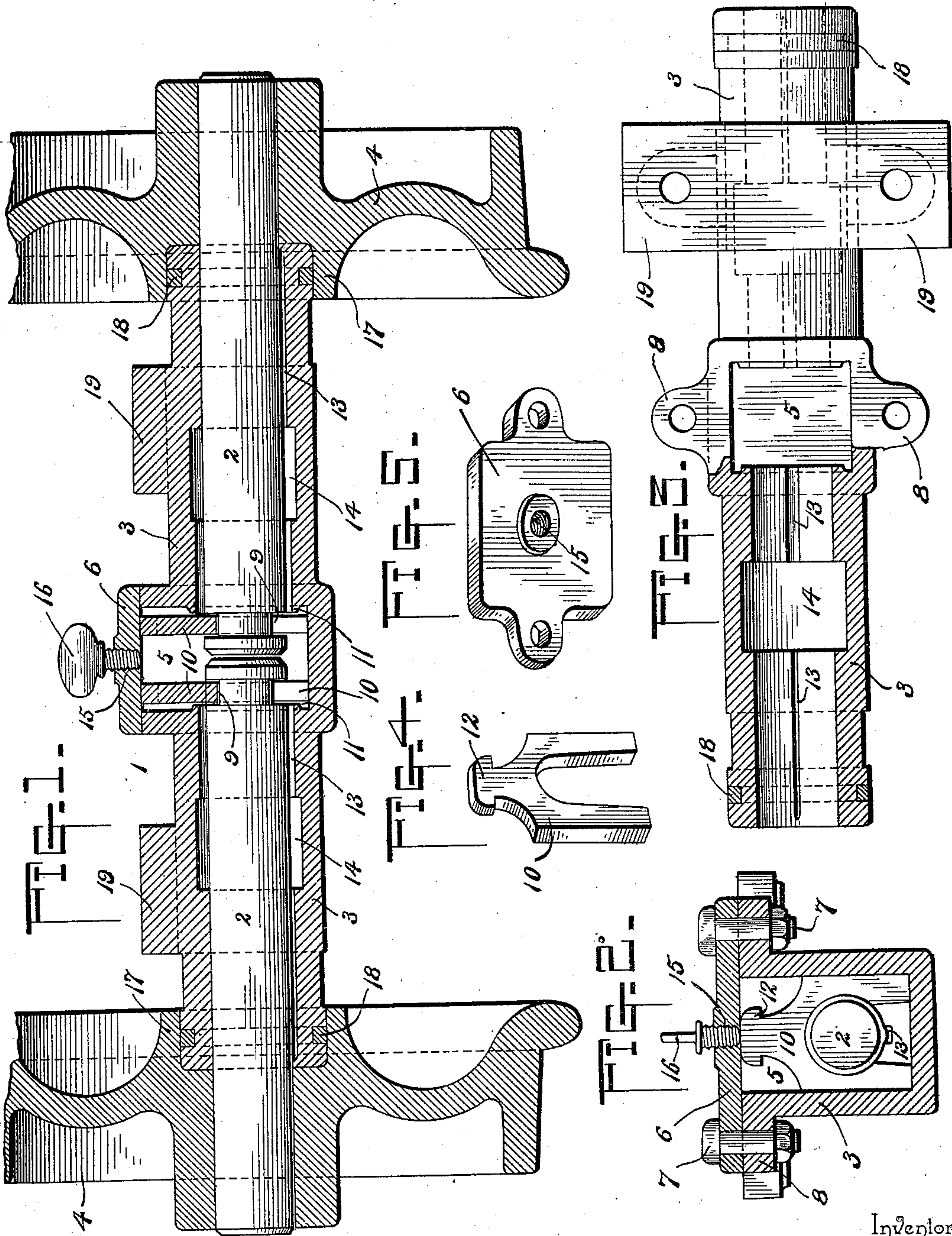
(No Model.)

2 Sheets—Sheet 1.

J. H. EGBERT.
CAR AXLE.

No. 580,934.

Patented Apr. 20, 1897.



Inventor

James H. Egbert,

Witnesses

A. M. Paynter,
J. J. Riley.

By his Attorneys,

C. A. Snow & Co.

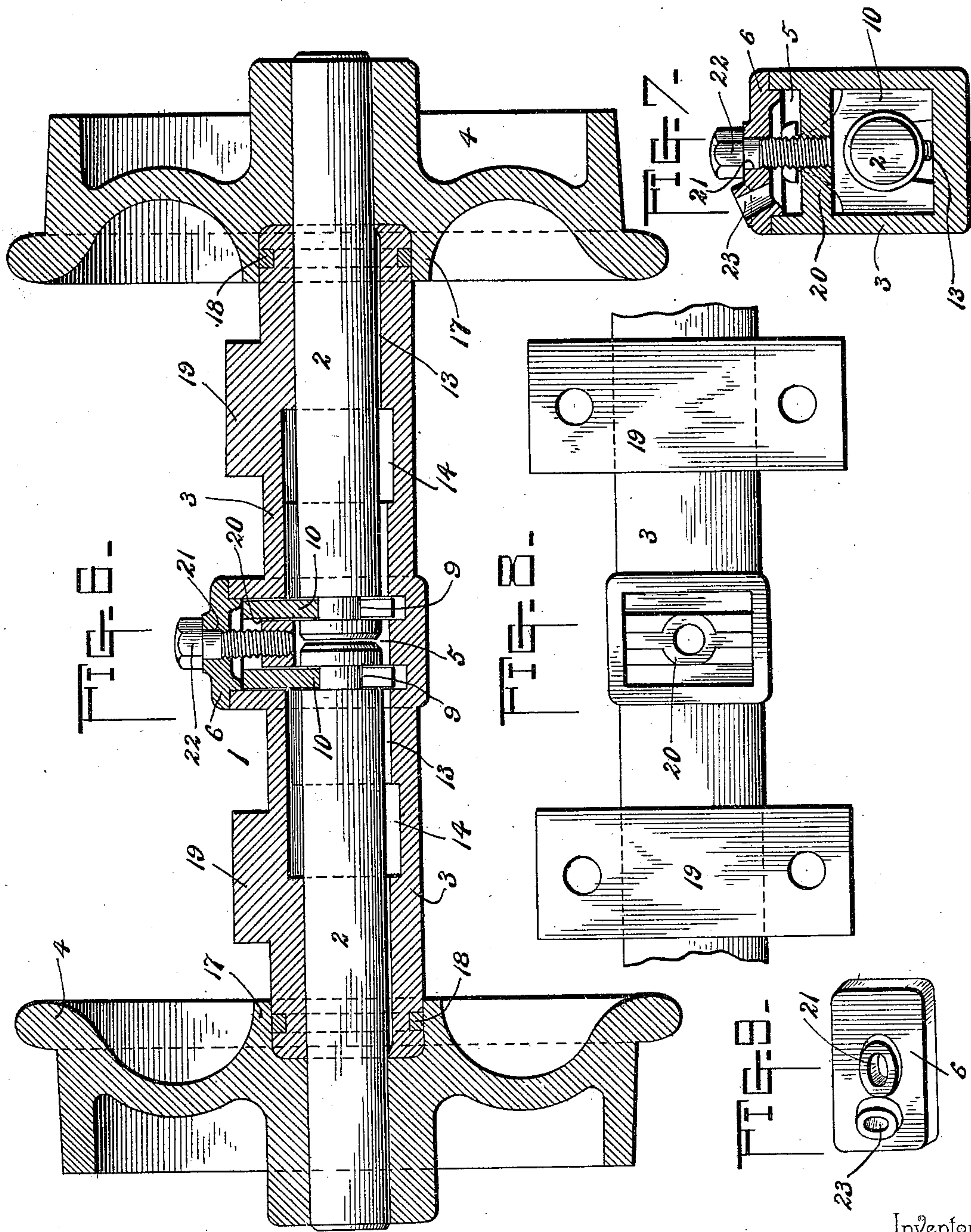
(No Model.)

2 Sheets—Sheet 2.

J. H. EGBERT.
CAR AXLE.

No. 580,934.

Patented Apr. 20, 1897.



Inventor

James H. Egbert,

Witnesses

A. M. Poynton,
J. H. Riley

By his Attorneys,

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JAMES H. EGBERT, OF ANACONDA, MONTANA, ASSIGNOR OF ONE-HALF TO
JOHN S. HICKEY, OF SAME PLACE.

CAR-AXLE.

SPECIFICATION forming part of Letters Patent No. 580,934, dated April 20, 1897.

Application filed April 24, 1896. Serial No. 588,940. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. EGBERT, a citizen of the United States, residing at Anaconda, in the county of Deer Lodge and State of Montana, have invented a new and useful Car-Axle, of which the following is a specification.

The invention relates to improvements in car-axles.

The object of the present invention is to improve the construction of divided car-axles and to provide a simple, inexpensive, and efficient one possessing great strength and durability, adapted to be readily applied to a car frame or body, and capable of distributing a lubricant to its entire bearing-surface without loss of oil.

Another object of the invention is to provide simple and efficient means for enabling car-wheels which are fixed to the ends of an axle to rotate independently of each other to prevent the sliding and grinding action on curves incident to car-wheels which are rigidly connected with each other.

A further object of the invention is to enable the axle-sections to be readily assembled and separated as desired.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a central longitudinal sectional view of a car-axle constructed in accordance with this invention. Fig. 2 is a central transverse sectional view. Fig. 3 is a detail view of the bearing-sleeve or axle-box, partly in plan view and partly in section. Fig. 4 is a detail view of one of the removable keys for locking the axle-sections in the bearing-sleeve or axle-box. Fig. 5 is a detail view of the removable plate or cover of the bearing-sleeve or axle-box. Fig. 6 is a central longitudinal sectional view of a car-axle, illustrating the modification of the invention. Fig. 7 is a central transverse sectional view. Fig. 8 is a detail view of the central portion of the bearing-sleeve or axle-box. Fig. 9 is a detail view of the removable plate or cover of the bearing-sleeve or axle-box.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a car-axle composed of two sections 2 and arranged in the bearing-sleeve or axle-box 3, forming a continuous unbroken bearing-box the entire distance between a pair of car-wheels 4, which are fixed to the outer ends of the sections 2 of the car-axle by the application of pressure or by shrinking or any other suitable means. The continuous bearing-sleeve or axle-box is provided with a centrally-arranged chamber 5, open at the top and having a removable cover or plate 6, which has perforated ears or extensions secured by bolts 7 or other suitable fastening devices to laterally-extending perforated lugs 8 of the sleeve or box 3.

The sections 2, which are provided at their inner ends with annular grooves 9, are inserted endwise into the sleeve or bearing 3 and are detachably locked therein by means of bifurcated keys 10, straddling the inner ends of the axle-sections and interlocked with the annular grooves 9. The bifurcated keys are held by the cover or plate 6 against vertical movement to prevent them from becoming accidentally disengaged from the annular grooves 9 and sections 2, and the sleeve or box is provided at opposite sides of the chamber 5, adjacent to the bore or bearing-opening, with ribs or flanges 11, which support the keys and enable them to resist the lateral thrust. The lower ends of the sides of the bifurcated keys may rest upon the bottom of the chamber 5 of the sleeve or box to prevent them from binding against the axle, or when the keys are too short to rest upon the bottom of the chamber the latter may be provided with upwardly-extending lugs for supporting the keys, but, as illustrated in Fig. 6 of the accompanying drawings, the bifurcated keys may rest upon the sections of the axle in the grooves thereof. The upper portions of the keys are substantially T-shaped to provide a convenient handle to enable them to be readily grasped to remove them from the chamber.

The sleeve or axle-box is provided on its interior with longitudinal grooves or passages 13 and is annularly recessed to provide oil-

receptacles 14, and the lubricant is introduced into the bearing-sleeve or axle-box through a threaded perforation 15, in which is normally arranged a screw or threaded plug 5 16. In order to retain the lubricant within the bearing-sleeve or axle-box and prevent it from leaking out at the end thereof, the car-wheels are provided at their inner faces with annular flanges 17, and the ends of the axle-
10 box or sleeve are provided with circumferential grooves receiving a packing-ring 18, constructed of leather or other suitable material. The axle-box or bearing-sleeve is preferably cylindrical in cross-section, but the central
15 chamber, which is formed by enlarging the axle-box or sleeve, may be rectangular or of any other desired configuration.

The car-axle is secured to the car body or frame by means of suitable fastening devices,
20 which pass through perforations of attachment-plates 19, formed integral with the sleeve or axle-box projecting laterally therefrom and arranged at opposite sides of the central chamber midway between the same
25 and the car-wheels.

In Figs. 6 to 9 of the accompanying drawings is illustrated a modification of the invention, in which the cover or cap of the central chamber of the sleeve or axle-box is secured in place differently from that shown in
30 the preceding figures. The chamber of the sleeve or box is provided above the ends of the sections of the axle with a transversely-disposed arched bar or cross-piece 20, which
35 is provided with a centrally-arranged threaded perforation, and the cover or plate 21 is secured in place by a screw 22, passing through a perforation of the cover or plate 21 and engaging the threaded perforation of the cross
40 bar or piece 20.

The cross bar or piece 20, which is located between the keys, is preferably formed integral with the sleeve or box, but may be mounted in any other suitable manner, and the cover
45 or plate 21, which is provided with an oil-hole 23, has a depending flange fitting within the top of the chamber to lock the cover or plate against any horizontal movement and to relieve the screw and the cross-piece 20 of the
50 strain.

The car-axle illustrated in the accompanying drawings is especially adapted for use in connection with mine-cars and the like; but the improvements are applicable to various
55 other kinds of cars.

It will be seen that the car-axle is simple and comparatively inexpensive in construction,

that it is strong and durable, and that it will require but little attention.

It will also be apparent that nuts, keys, 60 and other similar fastening devices for securing wheels to axles are dispensed with, that car-wheels are permitted to rotate independently of each other to prevent any grinding or sliding action on curves, and that the parts are 65 readily assembled and separated and supplied with a lubricant without wasting the latter.

Changes in the form, proportion, and minor details of the construction may be resorted to without departing from the principle or 70 sacrificing any of the advantages of the invention.

What I claim is—

1. In a device of the class described, the combination of a continuous axle-box or sleeve 75 provided with a central chamber open at the top, a plate or cover secured to the chamber and provided with an oil hole or perforation, attachment-plates located at opposite sides of the chamber, formed integral with the box or 80 sleeve and adapted to be secured to the car body or frame, axle-sections arranged in the box or sleeve and having at their inner ends annular grooves located within the chamber of the box or sleeve, wheels fixed to the outer 85 ends of the axle-sections and bifurcated keys arranged within the chamber, straddling the axle-sections and interlocked with the grooves, said keys being provided with upper handle portions and being retained in position by the cover or plate, substantially as 90 described.

2. In a device of the class described, the combination of a continuous sleeve or axle-box 95 provided with a centrally-arranged chamber forming an oil-receptacle, said sleeve or axle-box being provided at opposite sides of the chamber at points between the same and its terminals with oil-receiving recesses, and having longitudinal grooves extending from the 100 chamber to the recesses, a car-axle composed of two independent sections having their adjacent ends arranged in said chamber, and locking mechanism arranged in the chamber, engaging the axle-sections and detachably 105 securing them in the sleeve or box, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JAS. H. EGBERT.

Witnesses:

W. L. WALLS,
ALEXANDER DEVINE.