

(No Model.)

W. WALKER.  
AXLE BOX.

No. 561,457.

Patented June 2, 1896.

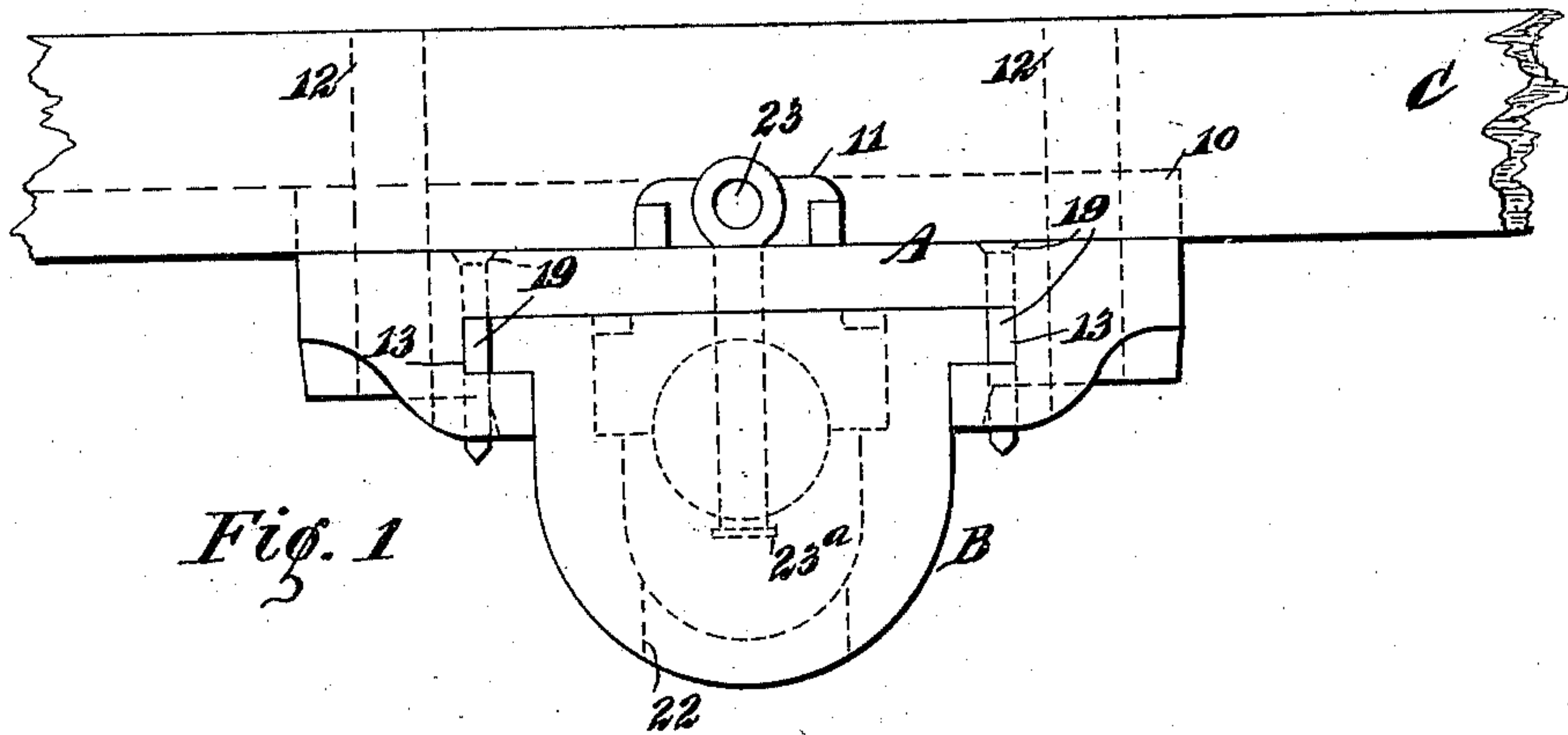


Fig. 1

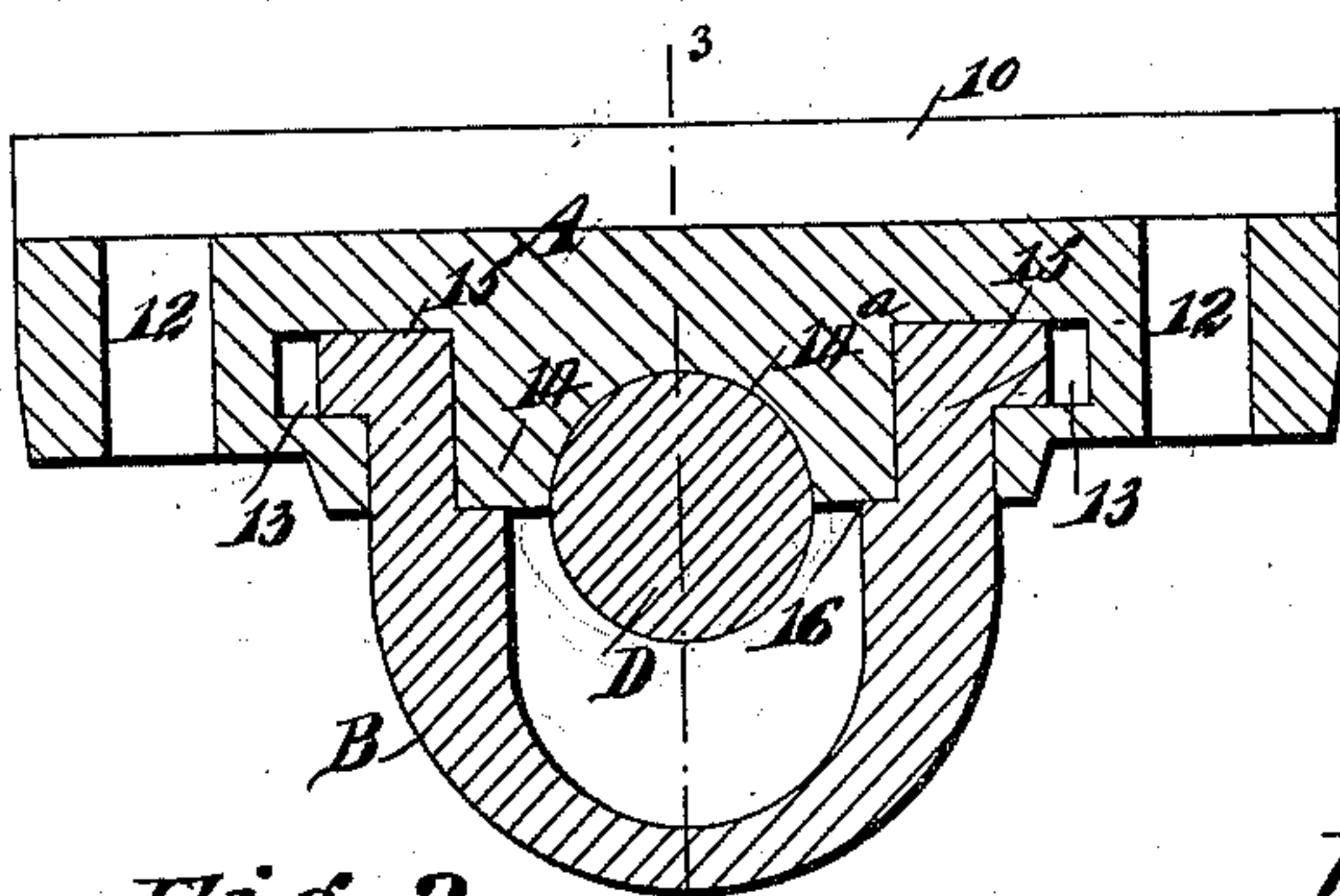


Fig. 2

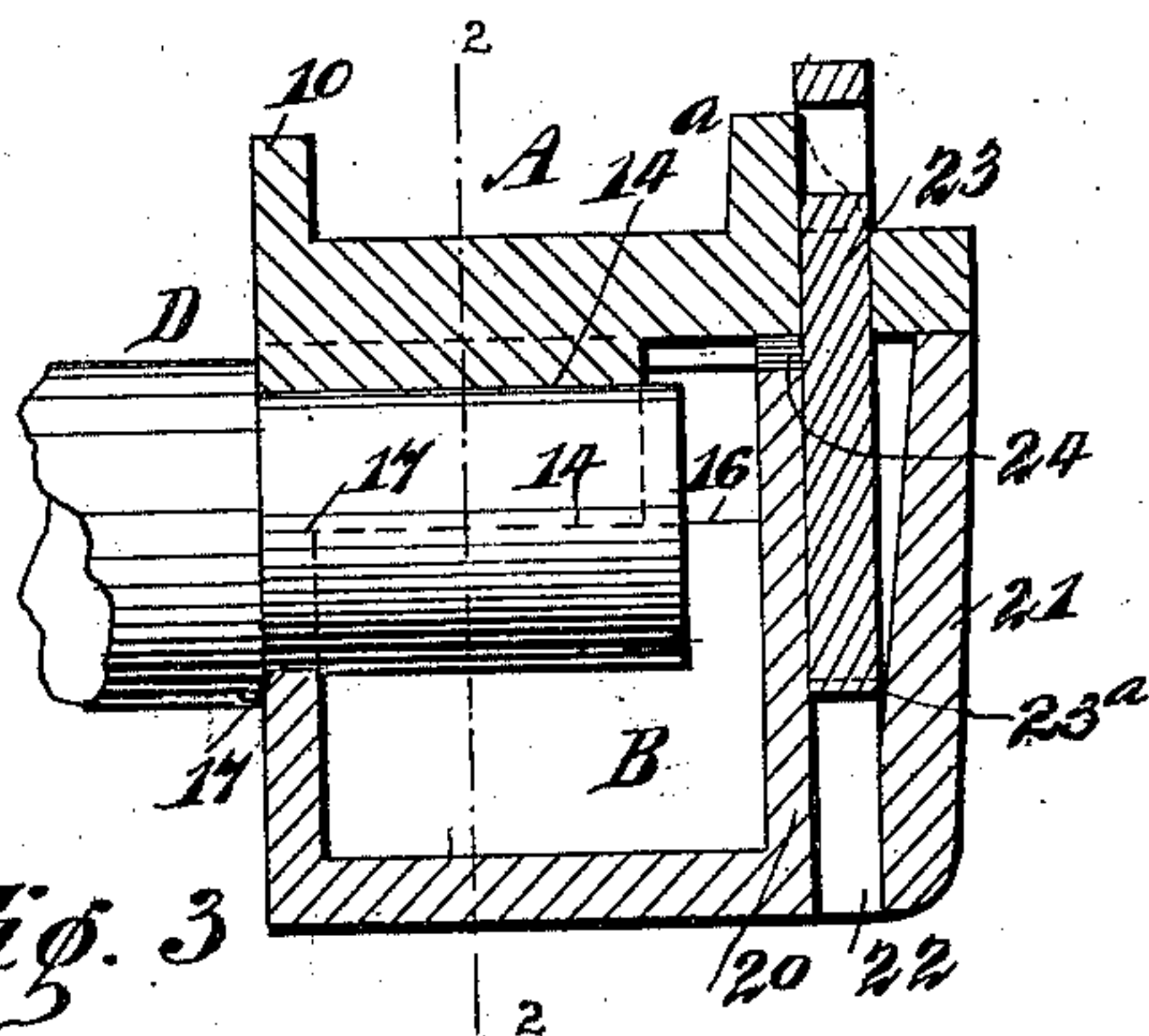


Fig. 3

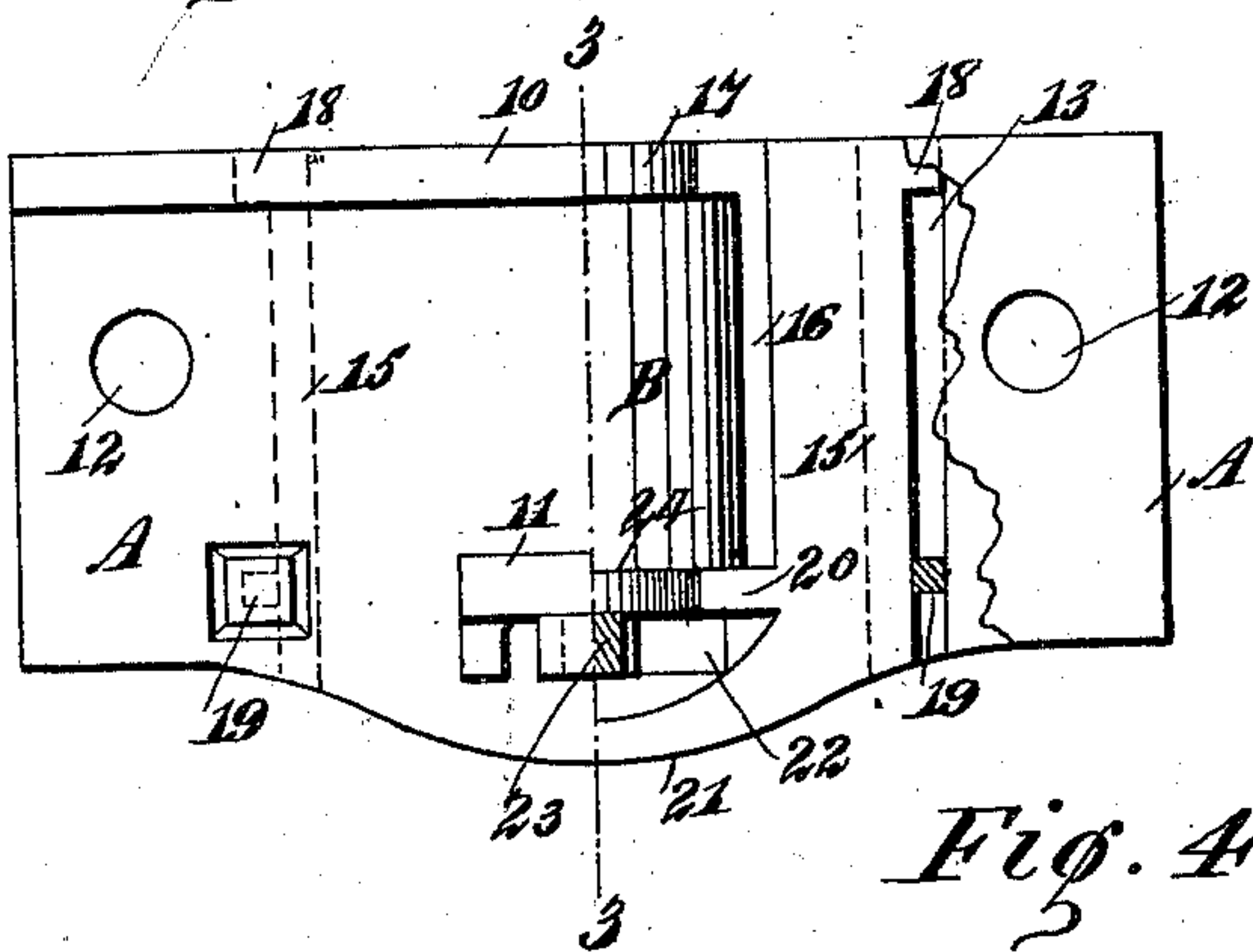


Fig. 4

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## AXLE-BOX.

SPECIFICATION forming part of Letters Patent No. 561,457, dated June 2, 1896.

Application filed November 8, 1895. Serial No. 568,336. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM WALKER, of Mayfield, in the county of Lackawanna and State of Pennsylvania, have invented a new and useful Improvement in Axle-Boxes, of which the following is a full, clear, and exact description.

My invention relates especially to an improvement in axle-boxes adapted to receive axles upon which the wheels run loose—as, for example, the axles and wheels of cars employed in the working of mines.

The object of the invention is to so construct the box as to prevent water and dirt from gaining access to the oil-holder, thereby preventing a waste of oil, since in many mines where coal is loaded out of water the water and dirt run into the boxes usually employed and force the oil out from the holder, as the oil will float on the water.

Another object of the invention is to construct the axle-box in such manner that no packing will be required and so that it will not be necessary to remove any bolts or nuts when changing a bent axle or a broken or worn-out wheel, since the box is made in slidably-connected sections. This peculiar construction of the box also obviates the necessity of unloading a car and throwing it from the track in the event a wheel or axle should break when the car is loaded, it being required only to raise the car and slip another wheel or axle in position.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a front elevation of the improved axle-box, illustrating it as applied to the sill of a car. Fig. 2 is a horizontal section through the improved box, the section being taken practically on the line 2 2 of Fig. 3. Fig. 3 is a section taken at a right angle to that shown in Fig. 2 and on the lines 3 3 of Figs. 2 and 4; and Fig. 4 is a plan view of the axle-box, a portion of the body of the box being broken away to disclose a portion of the interior of the oil-holder.

In carrying out the invention the axle-box may be said to comprise, primarily, a body A and an oil-holder B. The body A is flat upon the top, except at its inner edge, where it is ordinarily provided with a longitudinal rib 10, and at the front central portion of the box on the top a housing 11 is located. The top of the body of the box is adapted to fit against the bottom of a sill C of a car-frame, the rib 10 being at the inner edge of the sill, as shown in Fig. 1, and the body is bolted to the sill, openings 12 being provided near the ends of the body for that purpose.

In the under face of the body at each side of its center angular or inverted L-shaped slideways 13 are constructed, and between these slideways a block 14 is attached to or made integral with the body, the block being provided with a semicircular or segmental seat 14<sup>a</sup> to receive the reduced end or spindle of an axle D, as shown in Figs. 2 and 3, and preferably the spindle or that portion of the axle which enters the box is substantially of an even length with the aforesaid seat.

The oil-holder B extends upward in the vertical sections of the slideways 13 and is provided at the top at each side with a horizontal flange 15, the flanges entering the horizontal sections of the slideways, as illustrated in Fig. 2, and these flanges are of less width than the width of the said horizontal sections of the slideways.

The upper inner side faces of the oil-holder fit close to the side faces of the said block 14, and horizontal shoulders 16 are made in the inner side faces of the oil-holder to receive a portion of the lower face of the said seat-block in order that the oil-holder may have guided movement in the body and be preserved against lateral play.

The oil-holder may be removed entirely from the body by carrying the holder outward; but the holder, while it may be drawn out from the body at the front in order that the holder may receive a supply of oil or may be cleaned or in order that the axle may be withdrawn from the box, cannot, when carried in a forwardly direction, leave the body, since at the rear of its flanges 15 lugs 18 are formed on the outer edges of the said flanges, which likewise travel in the horizontal sections of the slideways 13, and pins 19, constituting stops,



are projected downward through the body of the box and through the forward portion of each slideway in the path of the lugs 18, as shown in Fig. 4. Therefore it will be observed  
 5 that the oil-holder cannot become lost, since it will not become separated from the body, and the heads of the pins are countersunk in the upper face of the body, and when the box is attached to the sill of the car will be held  
 10 in place by said sill, as shown in Fig. 1.

The oil-holder is provided with a semicircular recess 17 in the upper edge of its rear end to accommodate the spindle of the axle, and the recessed portion of the holder, in con-  
 15 junction with the seat of the block 14, forms the bearings for the axle-spindle.

The front of the oil-holder is provided with two walls, an inner one 20 and an outer one 21, and the space 22 between these walls, which  
 20 may be termed a "pocket," is open at both the top and bottom, and preferably the upper portion of the outer wall upon its inner face is inclined in a downwardly and inwardly direction.

The oil-holder is held in proper position relative to the body of the box by means of a key or a pin 23, held to slide within the surface of the body and partially inclosed by the hous-  
 30 ing 11, which serves to protect the upper end of the pin, while the lower end of the pin or key is provided with a head 23<sup>a</sup>, which prevents it from being withdrawn entirely from the body, and the pin or key 23, by entering the pocket 22, locks the holder to the body.

When it is desired to slide the holder outward from the body to release the axle, the pin or key 23 is raised, and its head will pass the upper edge of the inner front wall 20 of the holder by reason of a recess 24 being made  
 40 in that portion of the said holder, as shown in both Figs. 3 and 4.

While the vehicle to which this box is attached is in motion, and when a car is being  
 45 dumped on the head of breakers or dumped at any other point, the oil is thrown against the axle, lubricating the same, (as packing or waste is not required in this box,) and will thereby find its way into the hub of the wheel. In ordinary work it is not necessary to re-  
 50 plenish the oil frequently, since it will last for a long time.

The box is so constructed that it is not necessary to remove the bolt or nut when chang-  
 55 ing an axle or when changing a wheel, and axle when the car is loaded and a change in the or the wheel is required it is simply necessary to raise the car and slip the axle or wheel into place, and as the axle-spindle or that portion entering the box is substantially the

same length as its seat in the box when the  
 60 holder is pulled forward to its full extent the axle-spindle will be immediately released. The space 22 between the walls 20 and 21, which is open to the bottom of the box, is in-  
 65 tended to take off the water and dirt that may get in alongside the pin 23 and prevent it from getting into the holder. The outer wall 21 is also intended to prevent material that might happen to be near the track from strik-  
 70 ing the pin 23 and bending the same while the cars are in motion.

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

1. In an axle-bearing, a body-section pro-  
 75 vided with an axle-seat, an oil-holder partially embracing the axle and having slidable connection with the said body, lugs projecting from the slide of the oil-holder, and stops carried by the body and adapted to be  
 80 engaged by the said lugs and limit the movement of the oil-holder in one direction, whereby the said oil-holder will not be separated from the body and yet may be filled or cleaned, as and for the purpose specified. 85

2. An axle-bearing, the same consisting of a body portion provided with an axle-seat, an oil-holder having slidable connection with the said body and provided with lugs in the slide-  
 90 ways of the body, and keys or pins carried by the body and extending within the slide-ways in the path of the said lugs, as and for the purpose specified.

3. An axle-box, the same consisting of a body having an axle-seat, an oil-holder slid-  
 95 ably connected with the aforesaid body and provided at its front with an open pocket arranged to receive and for the exit of extraneous matter, a key carried by the body and entering the said chamber, and stops likewise  
 100 carried by the said body and limiting the movement of the oil-holder in an outwardly direction, as and for the purpose specified.

4. An axle-box, comprising a body portion provided with an axle-seat, an oil-holder slid-  
 105 ably connected to the body and having its front closed wall normally forward of the point reached by an axle in the box, a pocket on the outer side of the front wall open at its top and bottom, and a key adapted to engage  
 110 in said pocket and with the body to lock the parts together, as and for the purpose specified.

WILLIAM WALKER.

Witnesses:

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