

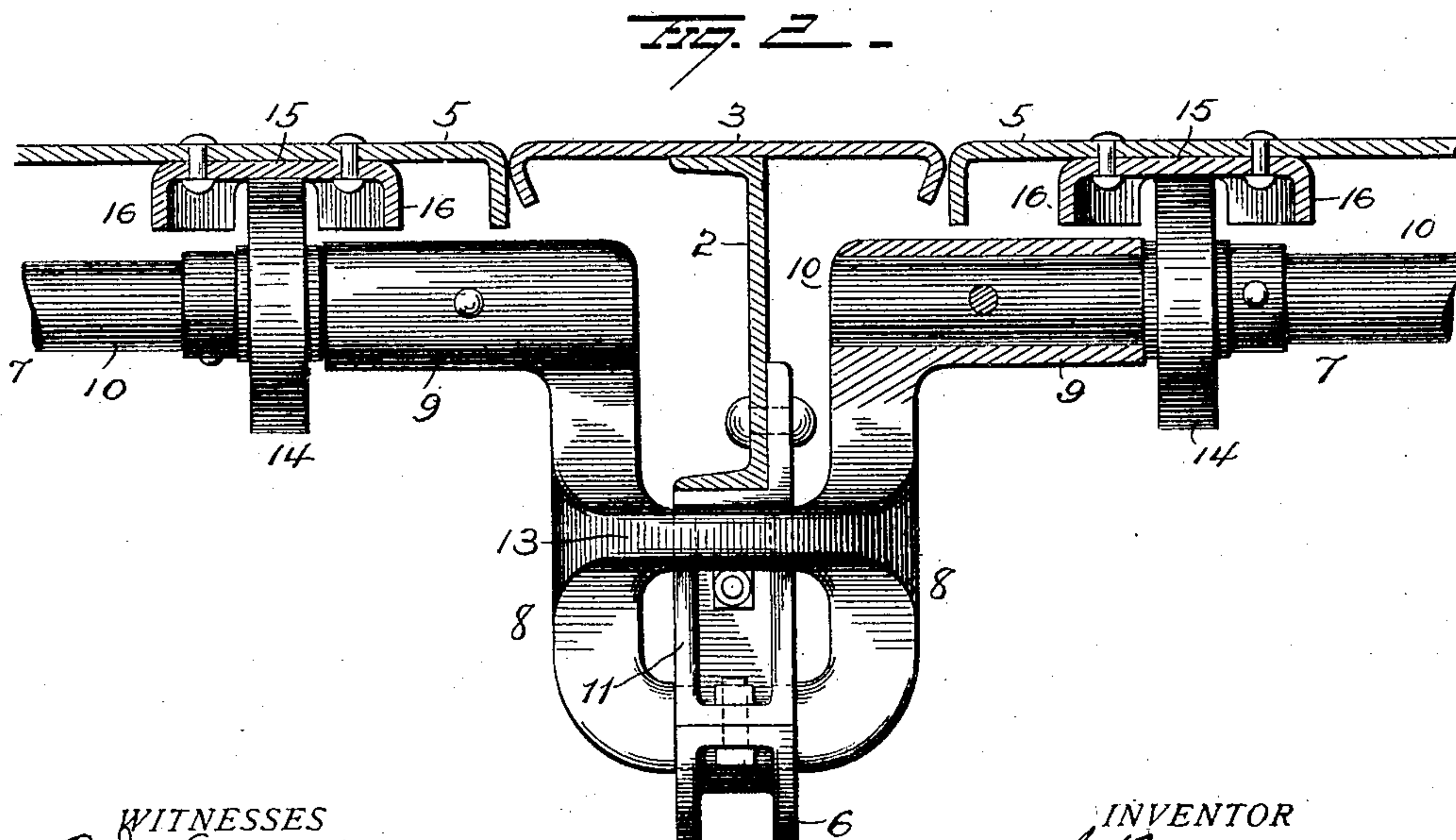
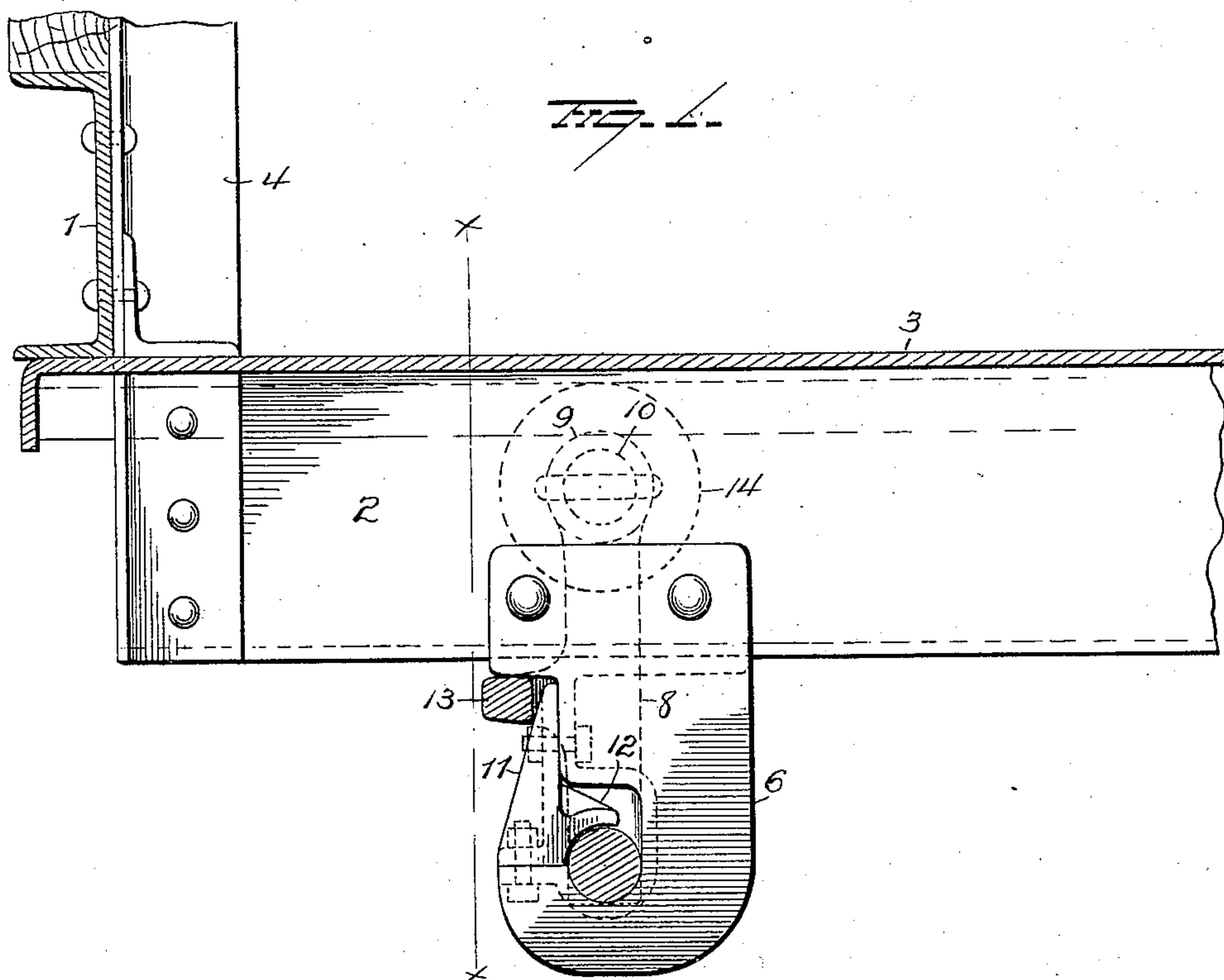
No. 865,561.

PATENTED SEPT. 10, 1907.

A. BECKER.  
RAILWAY CAR.

APPLICATION FILED MAY 10, 1907.

2 SHEETS—SHEET 1..



WITNESSES  
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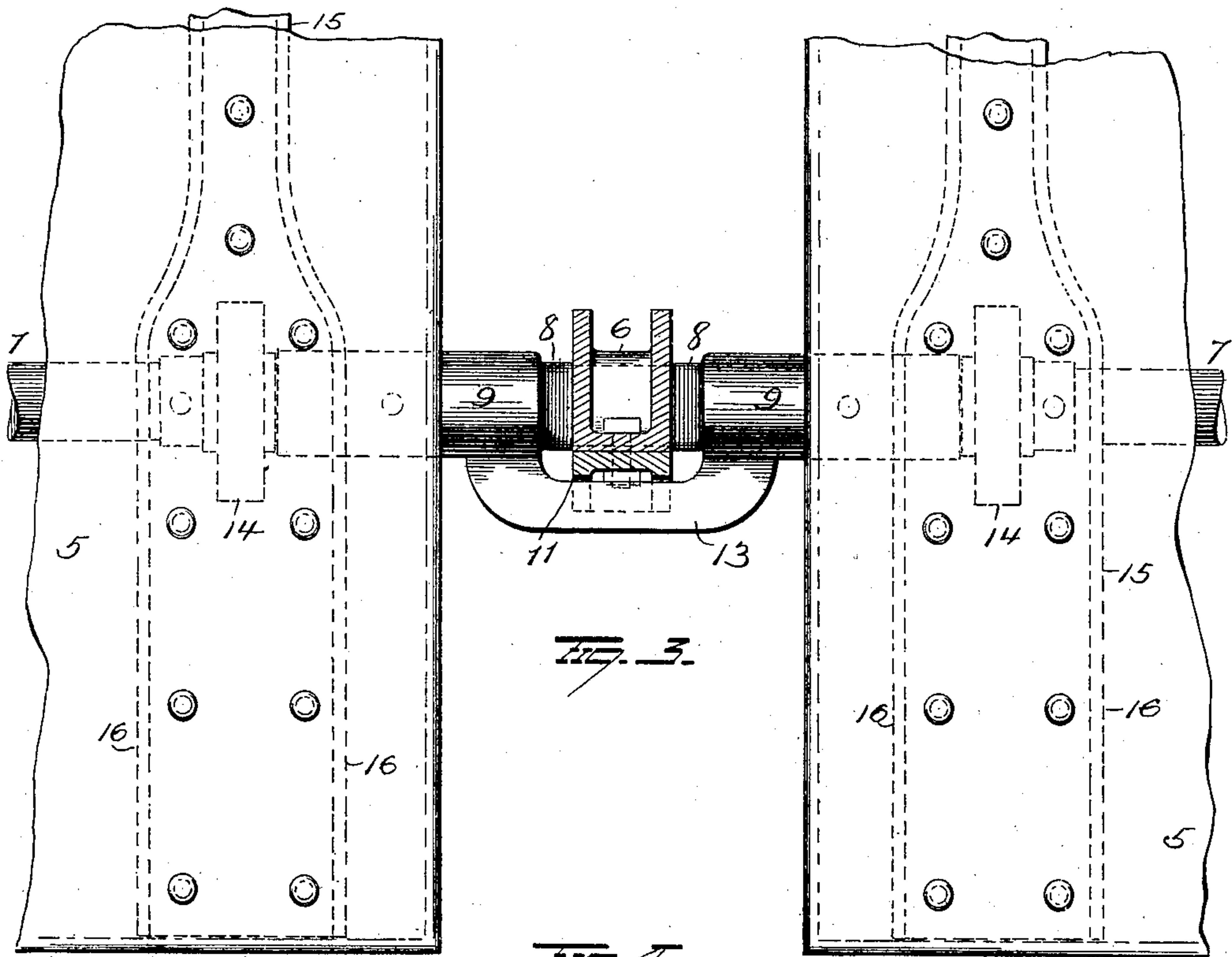


FIG. 3.

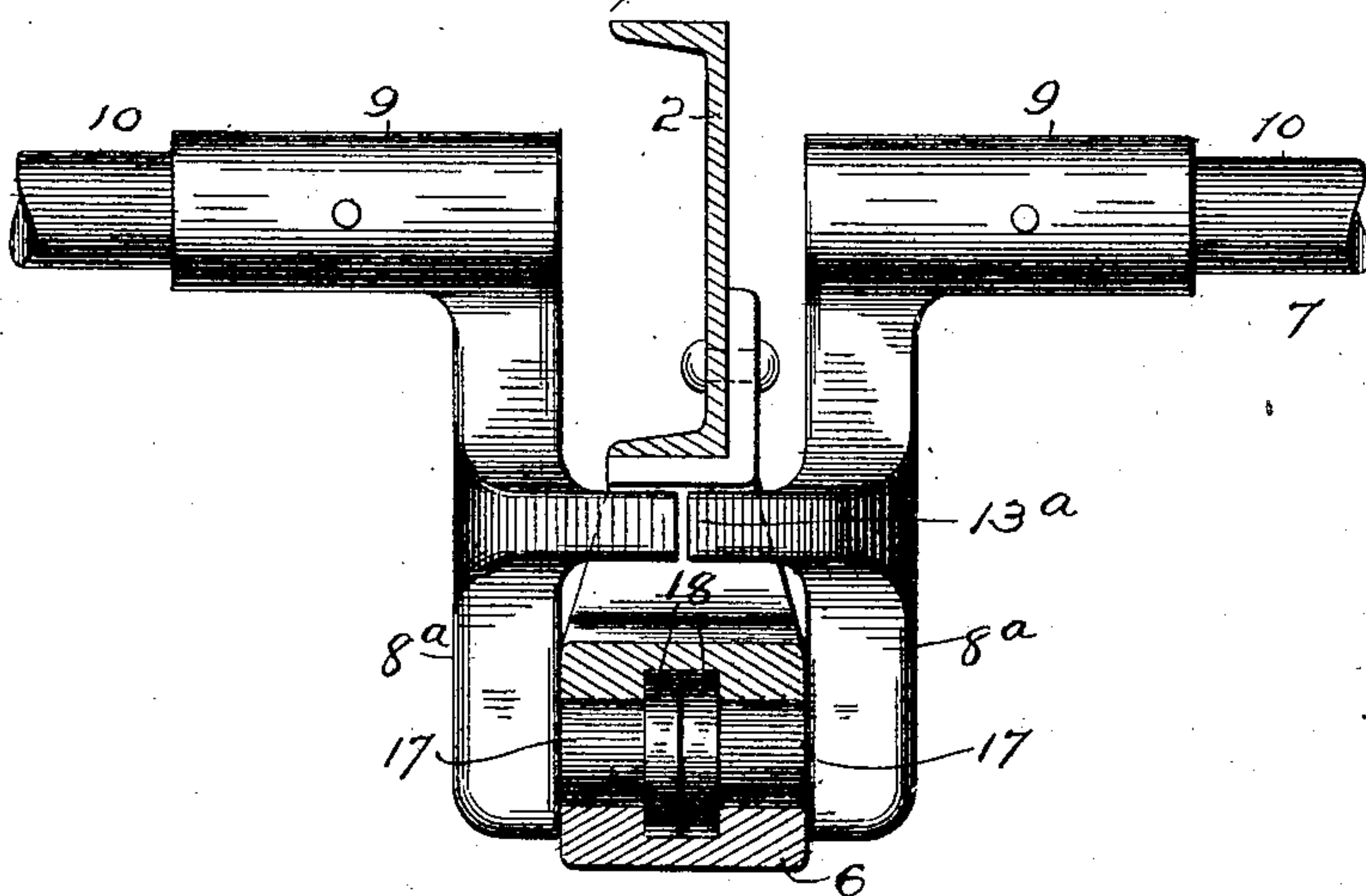


FIG. 4.

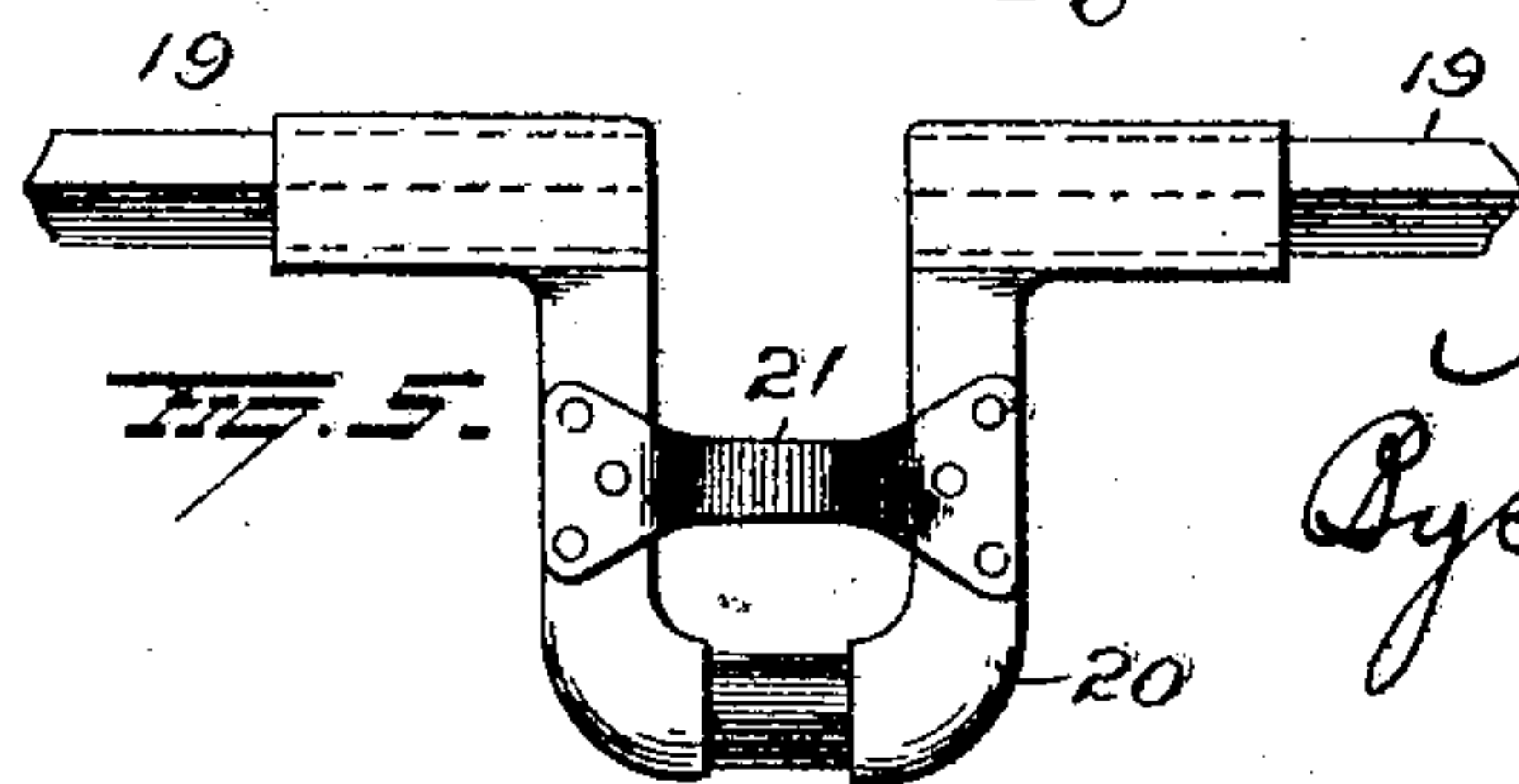


FIG. 5.

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# UNITED STATES PATENT OFFICE.

ANTON BECKER, OF COLUMBUS, OHIO, ASSIGNOR TO THE RALSTON STEEL CAR COMPANY,  
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## RAILWAY-CAR.

No. 865,561.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed May 10, 1907. Serial No. 372,939.

*To all whom it may concern:*

Be it known that I, ANTON BECKER, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in railway cars and more particularly to freight cars provided with a bottom consisting of drop doors,—the object of the invention being to provide simple and efficient operating means for the drop-doors.

A further object is to provide an improved construction of crank-shaft for operating the drop doors and improved means for mounting said shaft.

A further object is to provide means whereby a sectional operating crank-shaft for the drop-doors will be prevented from longitudinal play.

A further object is to so construct the operating shaft and its supporting means that they will cooperate with each other to limit the movements of the shaft and hence the movements of the drop-doors.

With these objects in view the invention consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view showing a portion of a car underframe in section and the application of my improvements thereto. Fig. 2 is a section on the line  $x-x$  of Fig. 1. Fig. 3 is a plan view. Fig. 4 is a view illustrating the construction of the operating shaft and its hanger at the meeting ends of two sections of said operating shaft, and Fig. 5 is a view of a modification.

1 represents a side sill of a car underframe; 2 a cross-bearer; 3 a cover plate thereon, and 4 a portion of a side stake. Portion of drop-doors 5 are shown in Figs. 2 and 3 and these have hinge connection with the car underframe, not shown. To the cross-bearer a hanger 6 is secured for supporting the operating shaft 7. In constructing this shaft a yoke 8 having a bearing at its lower end in the hanger 6 is provided at the upper ends of its parallel members with laterally projecting sleeves 9, in which shaft-sections 10 are secured. A removable filler block 11 is secured to the side of the hanger and provided with a lip 12 projecting over the horizontal portion of the yoke 8, thus preventing displacement of the latter. The parallel members of the yoke 8 are connected by means of a cross-bar 13. At respective sides of the yoke 8 the shaft is provided with rollers 14 which when the shaft is turned in its bearing afforded by the yoke 8 and hanger 6, will cooperate with the

hinged doors to raise them or to permit them to descend, according to the direction in which the shaft may be turned. To afford run-ways for the rollers 14 plates 15 are secured to the bottoms of the doors and provided at their edges with stiffening flanges 16. In order that the bolts which secure the run-ways to the doors may not interfere with the proper operation of the rollers, said run-ways are widened at that portion engaged by the rollers and the securing bolts are passed through said run-ways at respective sides of the center thereof so as to be out of the path of the rollers.

The cross-bar 13, above referred to, not only serves to brace the yoke 8 but it acts by cooperation with the hanger to constitute a stop for limiting the movements of the operating shafts when opening or closing the drop-doors.

It is customary to employ two operating shafts, each extending from an end of the car to the center thereof and in adapting my improvements to the two shafts or shaft sections where they meet at the center of the car, I prefer to make the yoke 8 in two sections 8<sup>a</sup> secured respectively to the respective shafts or shaft-sections, as shown in Fig. 4. The cross-bar 13 is, in this form of the invention divided, as shown at 13<sup>a</sup> Fig. 4, and the two members will operate as stops or limiting means in the same manner as above explained in connection with the construction shown in Fig. 2. In the construction shown in Fig. 4 the cross-bar of the yoke is also divided and consists of two pintles 17 projecting inwardly from the respective yoke members 8<sup>a</sup> and having bearings in the hanger 6. The inner end of each pintle 17 is provided with an annular head 18 mounted in a recess in the hanger 6 so as to prevent any longitudinal play of the operating shafts or shaft sections where they meet at the center of the car. A similar construction as that above described and shown in Fig. 4 may be located at the ends of the underframe to afford bearings for the operating shafts or shaft sections at the end sills and thus further assist in preventing longitudinal play of said operating shafts.

In the construction shown in Fig. 5 an angular operating shaft 19 is employed and the yoke 20 is braced by a cross-bar 21 made separate from the yoke and secured at its respective ends to the parallel members of the latter.

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is—

1. The combination with a car having drop-doors, of an operating shaft comprising two or more sections and a yoke intermediate of said sections, and a hanger in which said yoke is mounted.

2. The combination with a car having drop-doors and a hanger secured to the car, of an operating shaft for the drop-doors comprising a series of sections, yokes connect-



ing said sections and mounted in the hanger, and rollers mounted on said sections and coöperating with the drop-doors.

3. The combination with a car having drop-doors, of an operating shaft comprising several alining members and yokes connecting said alining members, and hangers secured to the car and affording bearings for said yokes.

4. The combination with a car having drop-doors, of an operating shaft for the doors, said operating shaft comprising a series of members provided with engaging means for the doors, and a yoke connecting the adjacent shaft members, a hanger in which said yoke is mounted, and a stop on the yoke to engage the hanger.

5. The combination with a car having drop-doors, of an operating shaft for the doors comprising a yoke, shaft members secured to the respective arms of the yoke and provided with engaging means for the doors, and a hanger secured to the car and affording a bearing for the yoke.

6. The combination with a car having drop-doors and a hanger secured to the car, of operating means for the drop doors comprising a yoke provided at the upper ends of its parallel members with sleeves and having its horizontal portion mounted in said hanger and shaft sections secured in the sleeves at the upper ends of the parallel members of the yoke and provided with engaging means for the doors.

7. The combination with a car having drop-doors, of a hanger secured to the car, and an operating shaft sustained by the hanger, said operating shaft comprising a

yoke and shaft sections secured to the yoke and said yoke comprising two parallel members each having a mounting in the hanger.

8. The combination with a car having drop-doors, of a hanger secured to the car, of an operating shaft comprising alining sections, an arm secured to each section and provided with a headed pintle mounted in a recess in a hanger, and two of said arms with their pintles constituting a yoke connecting two shaft sections.

9. In a car having drop doors, the combination with the underframe, of a series of hangers secured to said underframe, an operating shaft for the doors, an arm projecting from said shaft and mounted in the hanger, said arm and hanger having coöperating means preventing longitudinal movement of the shaft.

10. In a car having drop doors, the combination with the underframe, of a series of hangers secured to said underframe, an operating shaft for the doors provided with arms or yokes mounted in said hangers and removable blocks secured to the hanger and provided with lips overhanging the portions of the arms or yokes which are mounted in said hanger.

In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.

ANTON BECKER.

Witnesses:

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T. W. LIVINGSTON.