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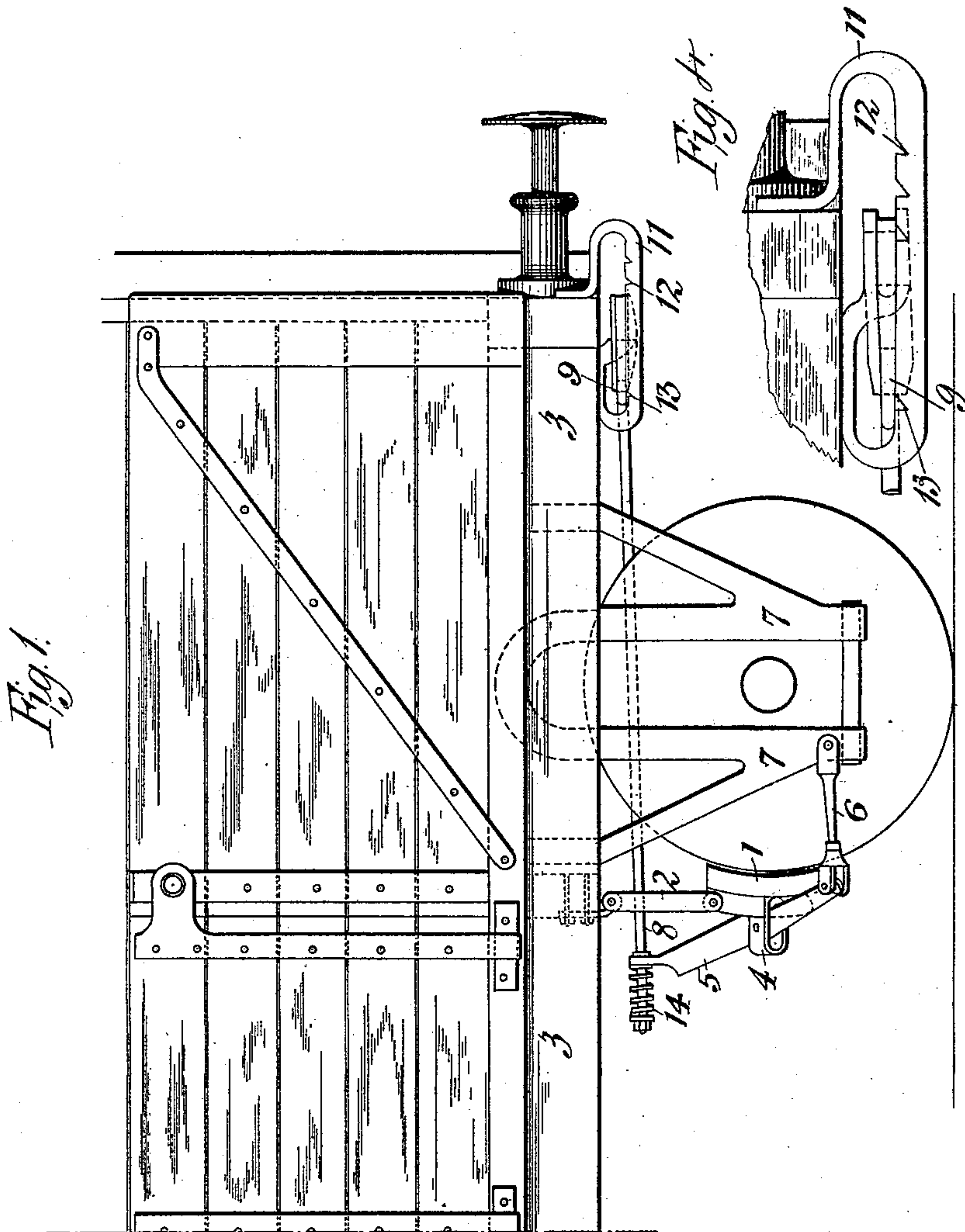
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W. PANTER, J. C. TAITE & T. W. CARLTON.

BRAKE APPARATUS FOR VEHICLES.

No. 437,449.

Patented Sept. 30, 1890.



Witnesses

A. Gardner
J. J. Davis

Inventor

William Pantar
John Charles Taite
Thomas William Carlton

(No Model.)

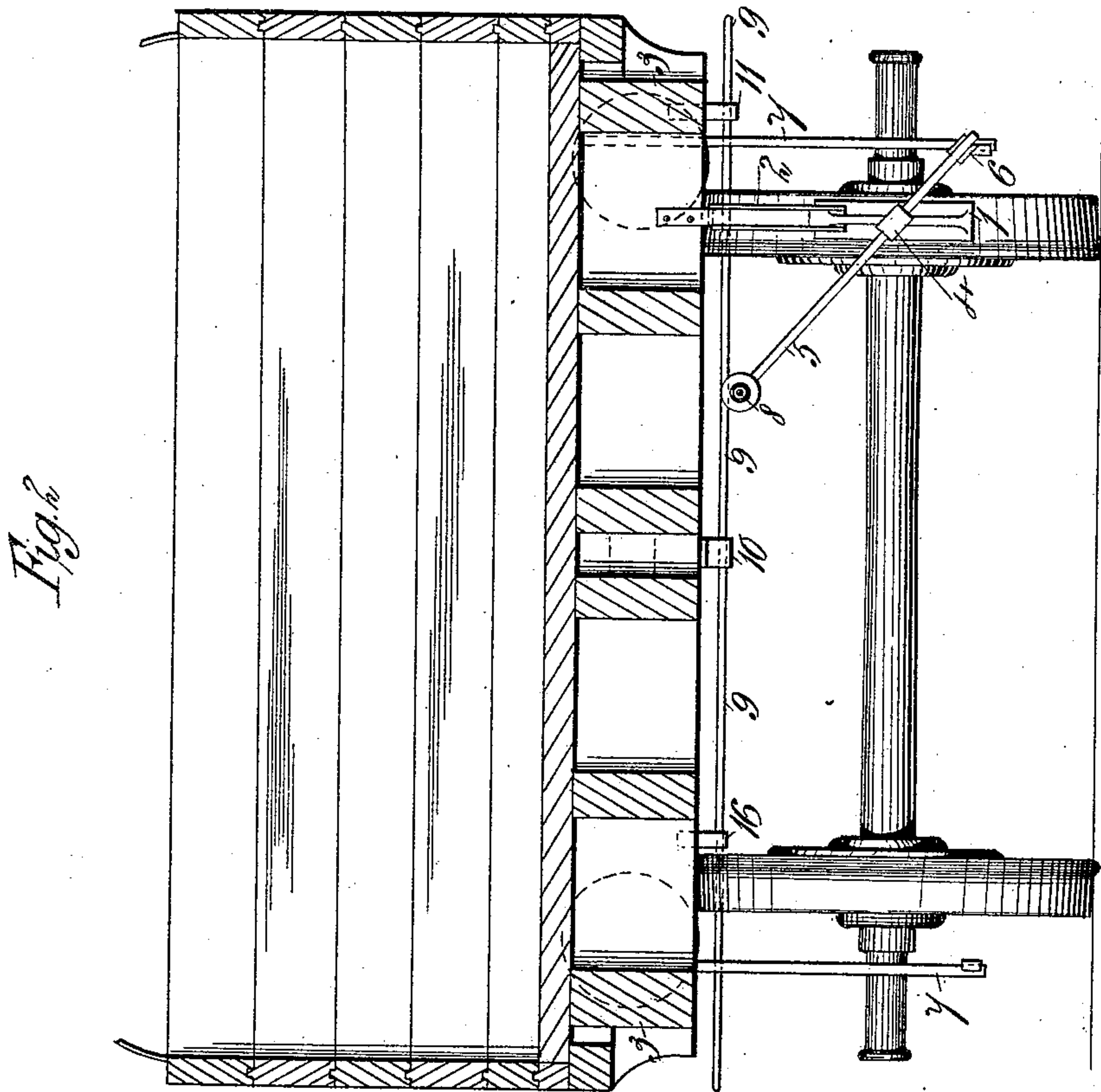
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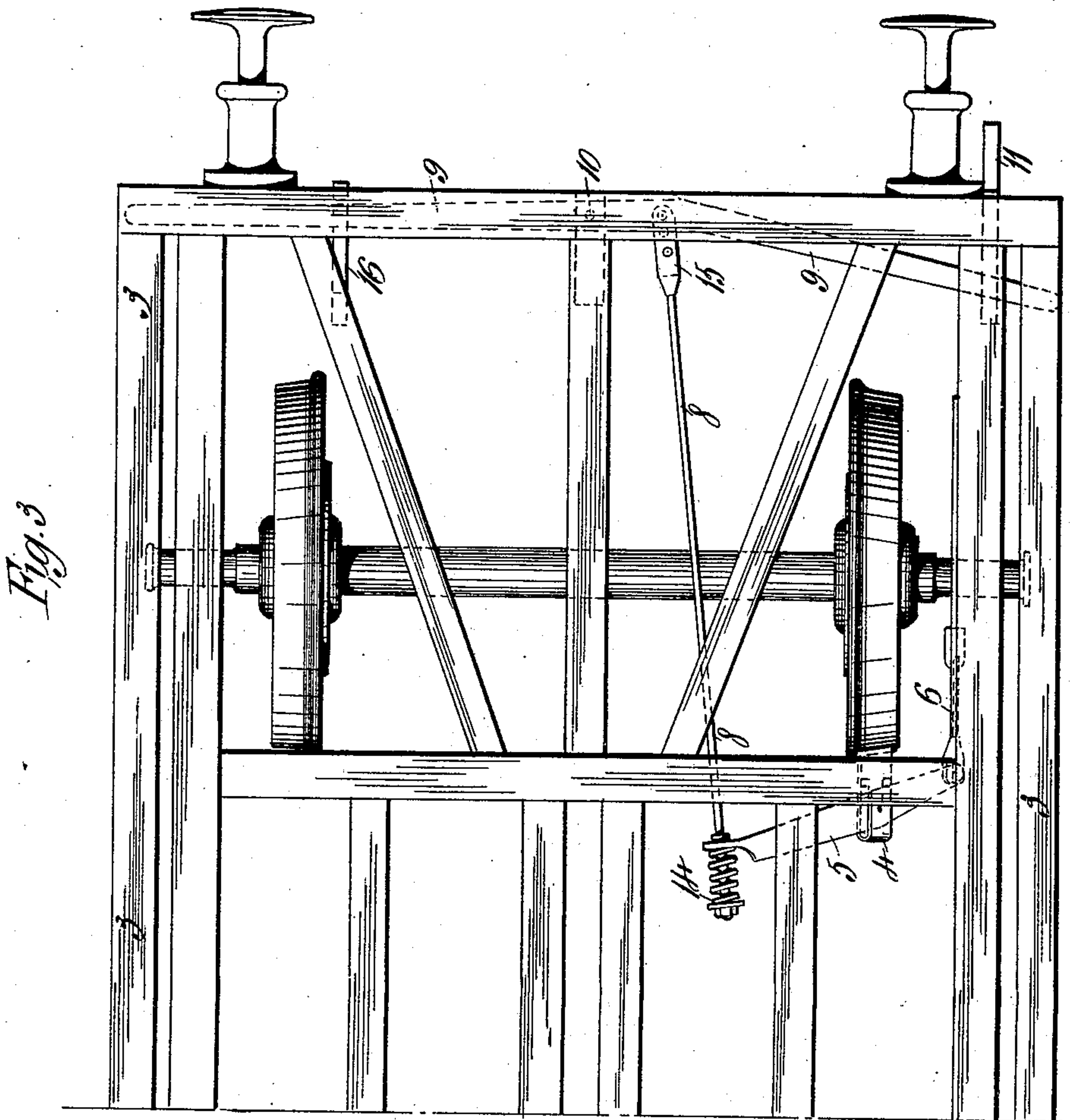
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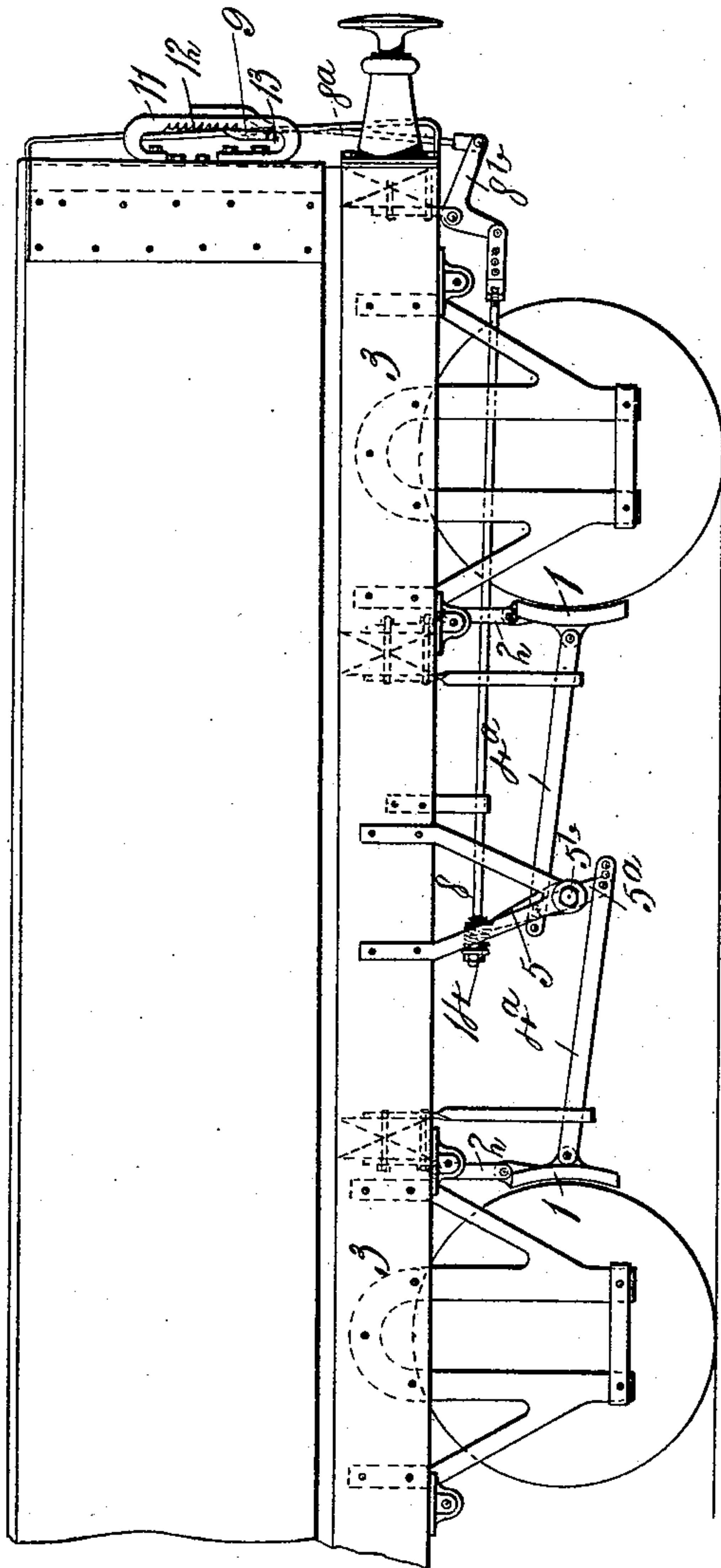
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Fig. 5.



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Fig. 6.

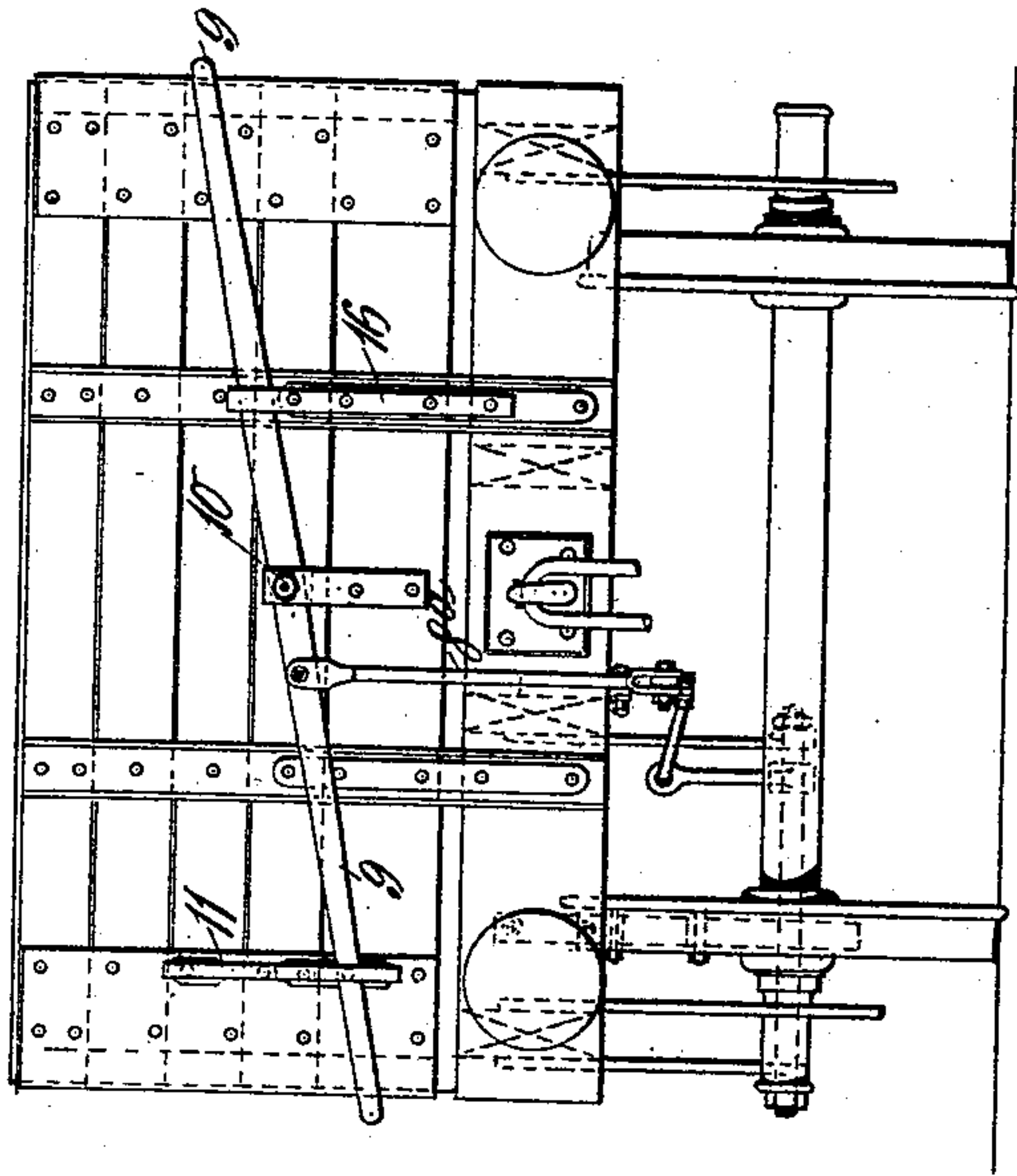
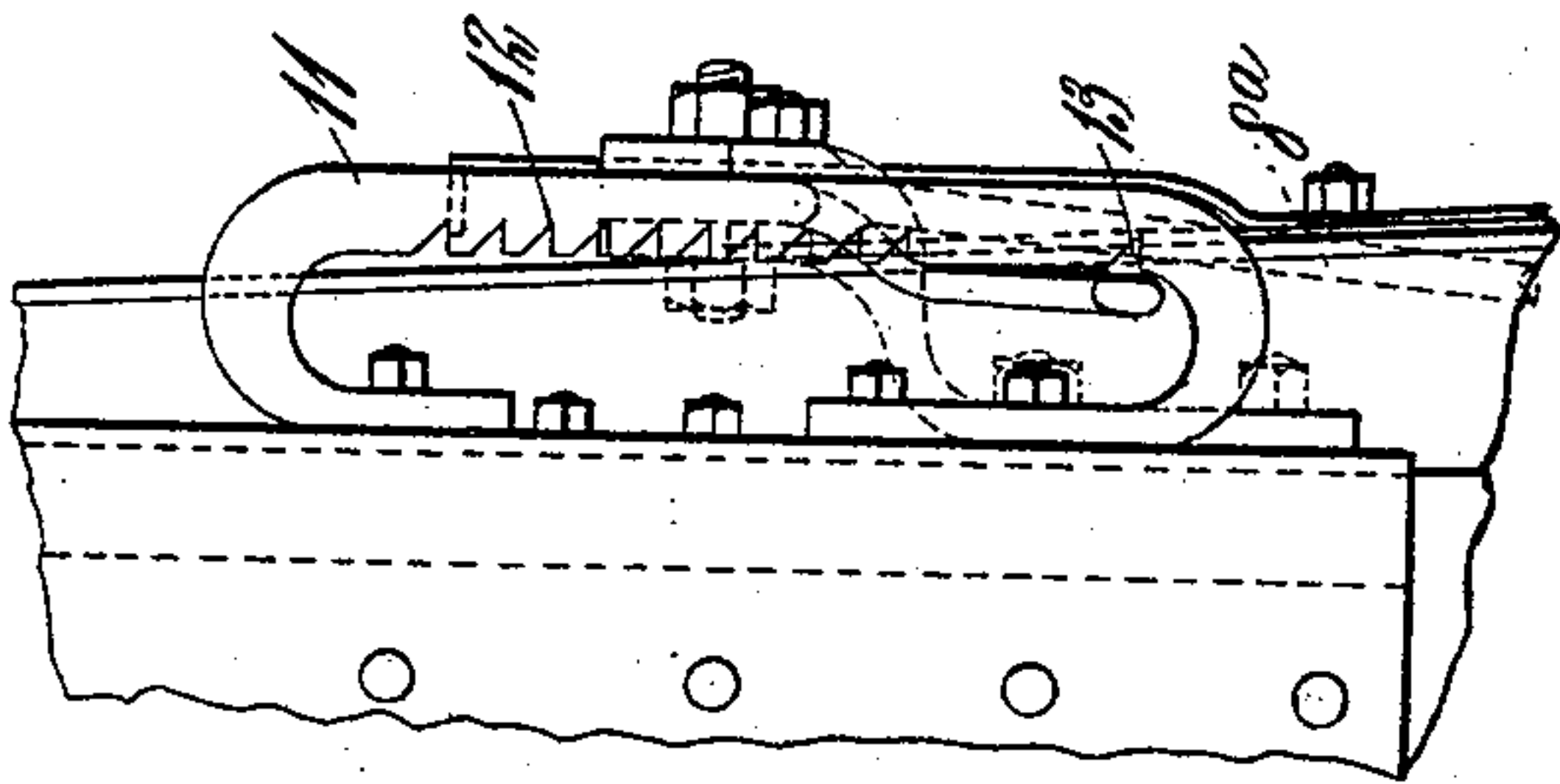


Fig. 8.



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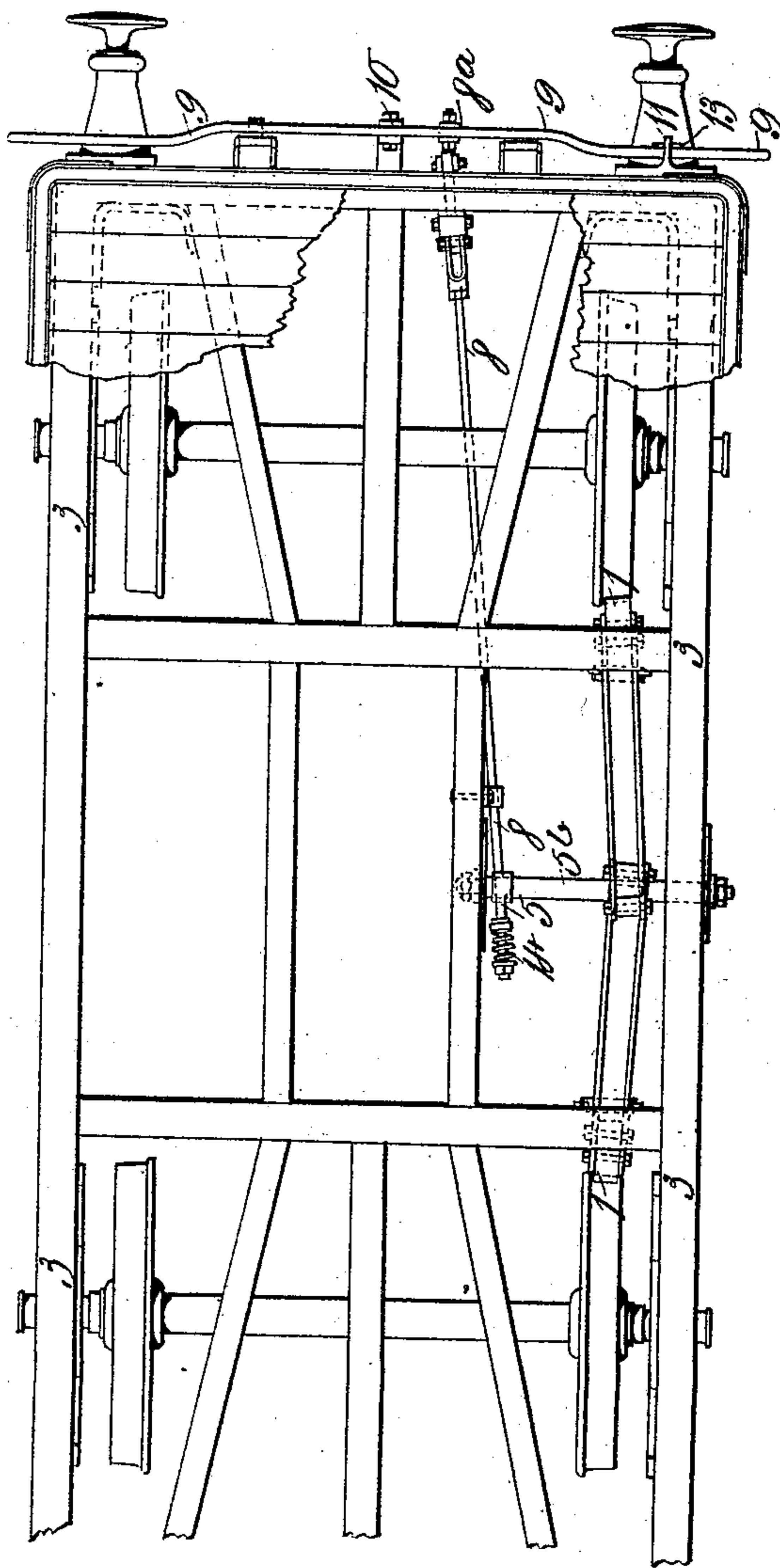
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Fig. 7.



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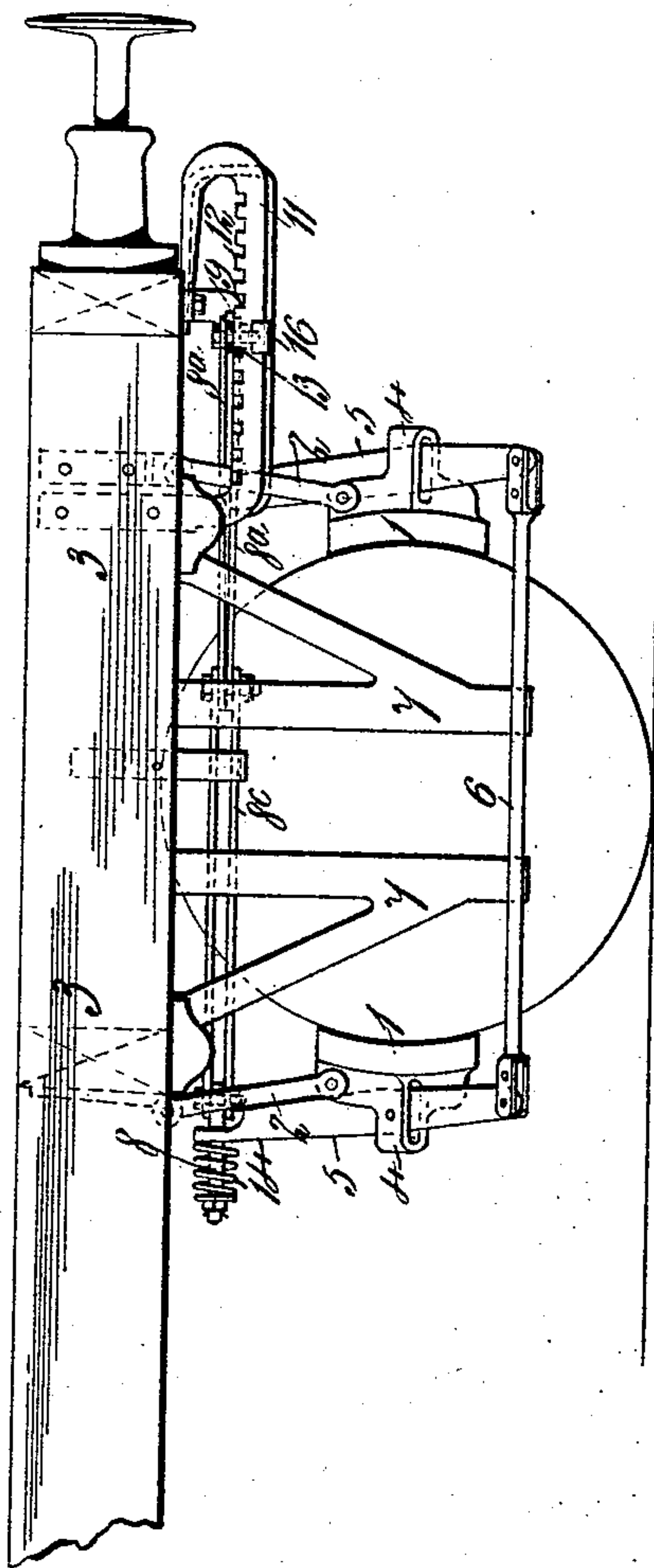
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Fig. 9.



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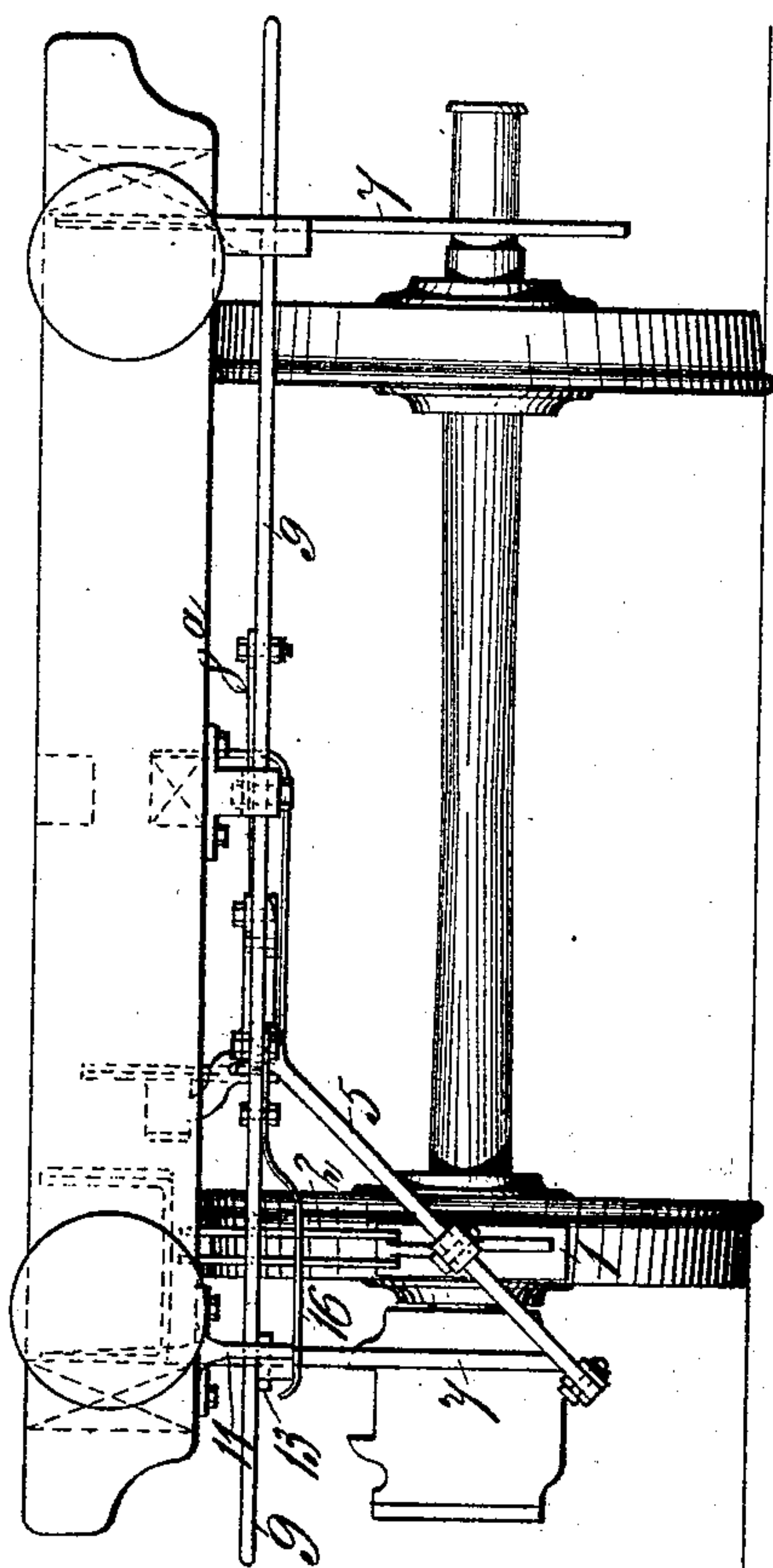
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Fig. 10.



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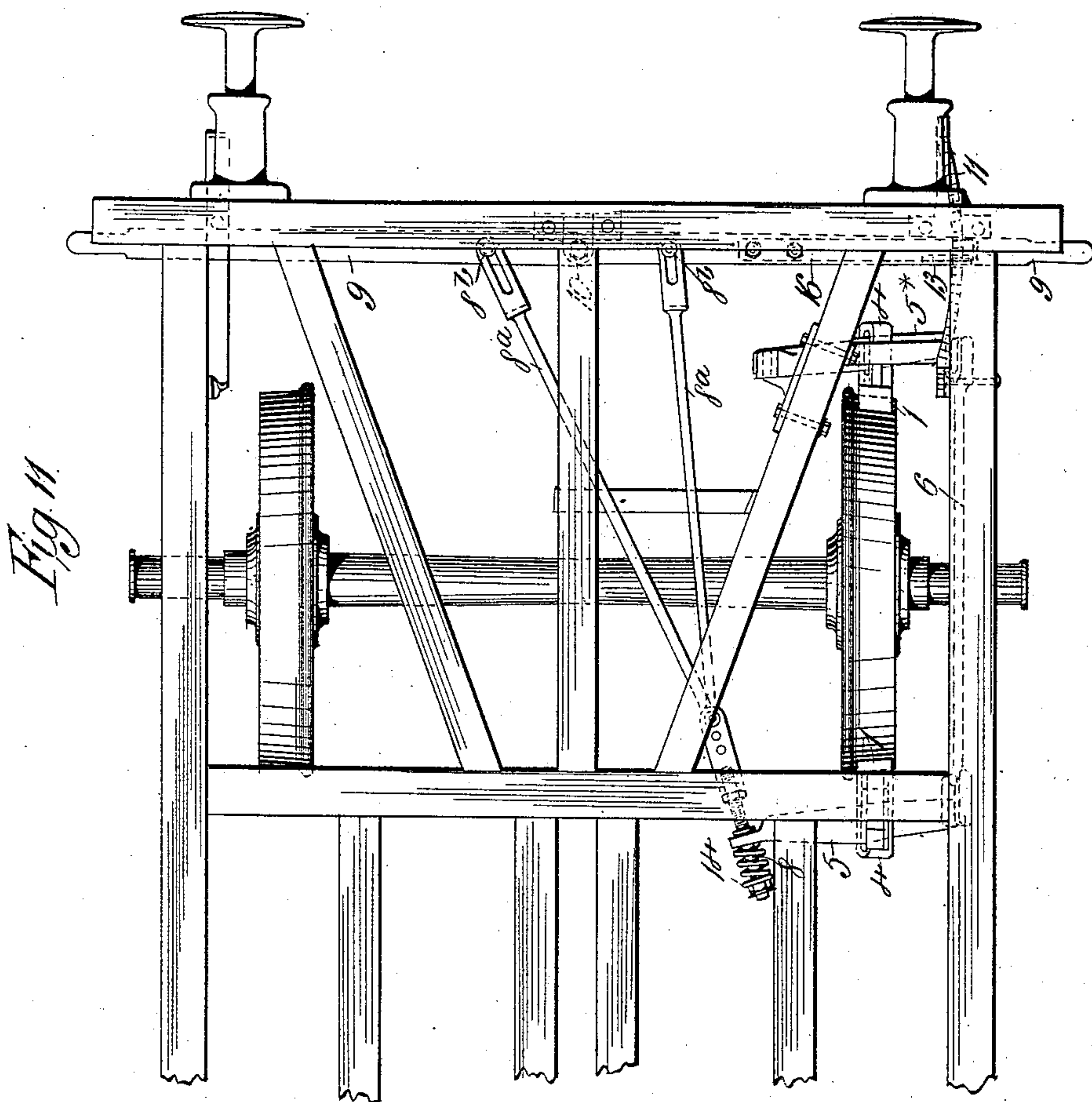
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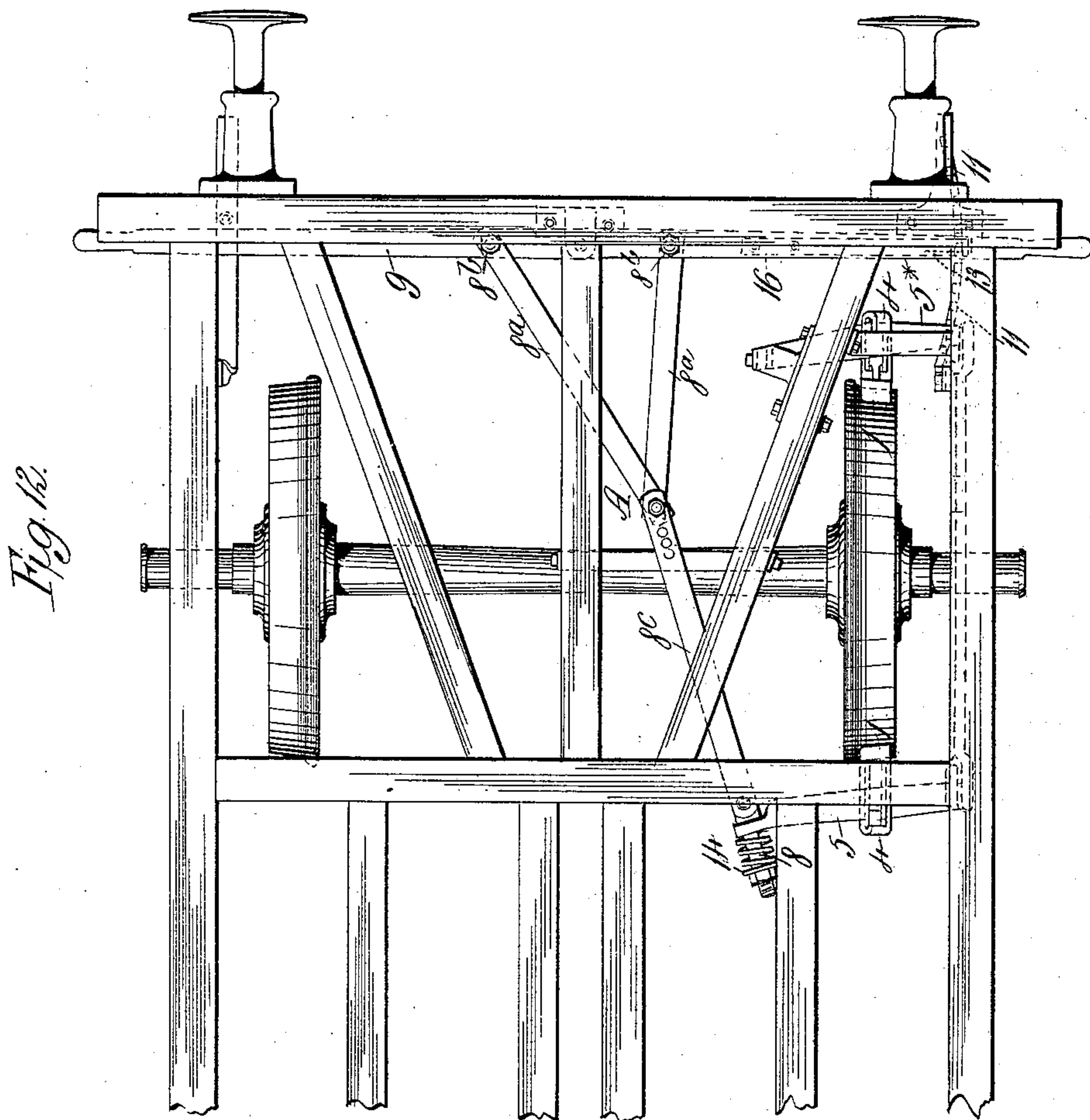
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UNITED STATES PATENT OFFICE.

WILLIAM PANTER, JOHN CHARLES TAITE, AND THOMAS WILLIAM CARLTON,
OF LONDON, ENGLAND.

BRAKE APPARATUS FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 437,449, dated September 30, 1890.

Application filed February 10, 1890. Serial No. 340,807. (No model.) Patented in England March 8, 1889, No. 4,100; in Germany May 5, 1889, No. 52,336; in France May 27, 1889, No. 198,530, and in Belgium May 27, 1889, No. 86,402.

To all whom it may concern:

Be it known that we, WILLIAM PANTER, JOHN CHARLES TAITE, and THOMAS WILLIAM CARLTON, subjects of the Queen of Great Britain and Ireland, all residing at London, England, have invented new and useful Improvements in Brake Apparatus for Vehicles, such as railway-wagons, (for which we have received a patent in France, No. 198,530, dated May 27, 1889; in Belgium, No. 86,402, dated May 27, 1889; in Great Britain, No. 4,100, dated March 8, 1889, and in Germany, No. 52,336, dated May 5, 1889,) of which the following is a specification.

15 This invention has reference to brake apparatus for vehicles—such as railway-wagons—that may be readily operated by hand from either side of the vehicle for the purpose of applying or releasing the brake block or blocks and for fixing the same in the “on” or “off” positions, as required. For this purpose the brake block or blocks is or are connected through suitable mechanism with a hand-lever that extends transversely, or approximately so, of the vehicle, and has its ends conveniently arranged for being actuated from either side of the vehicle. The hand-lever is provided with a tooth or projection that can be engaged with or disengaged from one or other of a series of notches formed in a suitable plate or frame forming a holding device attached to the vehicle. The lever on one side is, or may be, held in position by a spring, which may in some cases also form a fulcrum for the lever when releasing the same from the holding device from the side of the vehicle opposite to that at which this device is secured.

40 In order that the brake-shoe may be applied without shock and the pressure thereof on a wheel be adjusted as required, a spring may be arranged between the lever that is connected to the brake-block and the rod through which such lever is actuated.

45 Means are or may be provided whereby the effective length of the connecting-rod between the hand-lever and the brake-block lever can be adjusted from time to time to compensate for wear of the brake-shoe.

50 As will be obvious, a hand-lever, with hold-

ing device arranged according to this invention, may be used with brake apparatus of various constructions.

In the accompanying drawings, Figure 1 is a side elevation of a part of a railway-wagon fitted with brake apparatus according to this invention. Fig. 2 is a transverse section of the vehicle with the brake apparatus in elevation, and Fig. 3 is a plan. Fig. 4 is a detail view to a larger scale. Figs. 5, 6, and 7 are respectively side, end, and plan views of part of a vehicle with brake apparatus according to this invention, showing a different arrangement of the hand-lever. Fig. 8 is a detail view to a larger scale. Figs. 9, 10, and 11 are respectively a side elevation, transverse section, and plan illustrating a modified arrangement of the brake apparatus. Fig. 12 is a plan view illustrating another modified arrangement of brake apparatus according to this invention.

1 is a brake-block with shoe hung by a link 2 from the beam 3 of the vehicle. On the back of the block is a loop or stirrup 4, through which there passes a lever 5, which is pivoted to the said loop or stirrup. The outer end of this lever is connected by a rod or link 6 to the horn-plate 7. The inner end is coupled or connected to a rod 8, which is pivoted at its other end to a hand-lever 9. This hand-lever is pivoted at 10 to the head-stock, and according to this invention stretches across the wagon, so that it can be operated from either side thereof. It moves in a stirrup or guide 11 at one end, and in this guide there are notches 12. A tooth 13 on the lever 9 can be made from either side of the vehicle to take into one or other of these notches, in order to keep the brake-block and attached parts in the on or off position after the lever has been operated.

The pressure exerted on the lever 3 by the rod 8 in applying the brake may advantageously be transmitted through a spring 14. This enables the brake to be applied with any desired degree of force and lessens shock when applying the brake and during shunting operations. The spring is interposed between the lever 5 and a nut and washer on the end of the rod 8. 15 is a coupling by

which the length of the rod can be adjusted to compensate for wear of the brake-shoe.

To release the brake from the side of the vehicle, (shown in Fig. 1,) the toothed end of the lever 9 is lifted to bring the tooth 13 out of the notch 12 in which it was held, and the lever then moves or is moved forward. It can then be secured in the off position by engaging the tooth in the end notch 12. To release the brake from the opposite side of the vehicle, the end of the lever at the side is depressed to lift the tooth from the notch, and then it is raised to again engage the tooth. The fulcrum-pin 10 of the hand-lever has sufficient play in its bearings to enable the toothed end of the lever to be thus raised and lowered from either side of the vehicle. A spring 16, secured to the vehicle, serves to hold up the end of the lever on the side remote from the stirrup or guide 11.

In Figs. 5, 6, 7, and 8 the hand-lever 9 is pivoted to the end of the vehicle so as to work in a vertical plane, and extends to each side of the vehicle, so that it can be conveniently operated from either side thereof. The lever is connected to the operating-rod 8 by a rod 8^a and bell-crank lever 8*. In this arrangement of brake apparatus there is a suspended brake-block 1 for each of the two wheels at one side of the vehicle. The two blocks are connected by links 4^a to a lever 5^a, fixed upon a rock-shaft 5^b, upon which the operating-lever 5 is also fixed. This lever 5 is operated through a rod 8, as in Figs. 1, 2, and 3, from the hand-lever 9, through the rod 8^a and bell-crank lever 8*, hereinbefore mentioned.

In Figs. 9, 10, and 11 the hand-lever 9 is connected to the rod 8, which, in this case, is made much shorter than in the other arrangements, hereinbefore described, by two rods 8^a 8^a. These rods are slotted at their ends adjacent to the hand-lever, and are connected thereto by pins 8^b, that are able to slide in the slots. With this arrangement, as will be obvious, in whichever direction the hand-lever 9 is moved from the normal position in which it is shown the brake-blocks 1 will be applied to the wheel. When the lever is returned to its normal position, the brake-blocks will be released, but will not be positively taken off the wheel, owing to the pins 8^b moving in the slots in the adjacent ends of the rods 8^a; but the blocks will be free to move away from the wheel by the action of gravity. The hand-lever 9 can, as in the previously-described arrangements, be raised or lowered from either side of the vehicle for the purpose of engaging its projection 13 with or disengaging this projection from one or other of the notches 12 in the stirrup or guide 11. The spring 16 in this arrangement is fixed to the hand-lever and bears against the under side of the notched stirrup or guide 11, so as to normally keep the projection 13 within one of the notches 12.

Fig. 12 illustrates an arrangement of brake

apparatus similar to that shown in Figs. 9, 10, and 11, but in which the ends of the two rods 8^a, adjacent to the hand-lever 9, are not slotted, but are jointed to the lever by the pins 8^b, so that when the lever is moved in either direction from its normal position both rods will be operated. The other ends of the rods 8^a are jointed to one end of a pair of links 8^c, the other end of which is jointed to the rod 8. With this arrangement the brake-shoes will be put on the wheel when the hand-lever 9 is moved in either direction from its normal position, and will be positively taken off the wheel by the lever when the same is returned to its normal position. By the construction shown the point of connection A of the rods 8^a with the pair of links 8^c will, when the hand-lever is operated, move in an arc of a circle having its center coinciding with the center of motion of the lever.

What we claim is—

1. In brake apparatus for vehicles, such as railway-wagons, the combination of a brake block or blocks, a hand-lever adapted to actuate the same, and a holding device, said hand-lever being arranged to extend transversely, or approximately so, of the vehicle and capable of being actuated and of being engaged with and disengaged from said holding device from either side of said vehicle indifferently, substantially as herein described, for the purposes set forth.

2. In brake apparatus for vehicles, such as railway-wagons, the combination, with a brake block or blocks, of a hand-lever arranged to extend transversely, or approximately so, of the vehicle and capable of being operated from either side of said vehicle, a holding device with which said hand-lever can be engaged or from which it can be disengaged, as set forth, two rods connected at one end to the respective arms of said hand-lever, a third rod, to which the other end of each of the first-mentioned rods is directly jointed, and suitable connections between said third rod and the brake block or blocks, substantially as herein described, for the purpose set forth.

3. In brake apparatus for vehicles, such as railway-wagons, the combination, with a brake block or blocks, of a hand-lever arranged to extend transversely, or approximately so, of the vehicle and capable of being operated from either side of said vehicle, a holding device with which said hand-lever can be engaged or from which it can be disengaged, as set forth, two rods jointed at one of their ends to the respective arms of said hand-lever, so as to follow the movement thereof in each direction, a third rod, to which the other end of each of the first-mentioned rods is directly jointed, and suitable connections between said third rod and the brake block or blocks, substantially as herein described, for the purpose set forth.

4. In brake apparatus for vehicles, such as railway-wagons, the combination, with a brake block or blocks, of a hand-lever 9, arranged

to extend transversely of the vehicle, or approximately so, and provided with a projection 13, a guide or stirrup 11, having recesses 12, adapted to receive and hold said projection, and suitable connections between said hand-lever and brake-block, substantially as herein described.

5. In brake apparatus for vehicles, such as railway-wagons, the combination, with a brake block or blocks, of a hand-lever 9, arranged to extend transversely of the vehicle, or approximately so, and provided with a projection 13, a guide or stirrup 11, having recesses 12, adapted to receive and hold said projection, a spring 16, that normally keeps the said hand-lever in engagement with said guide or stirrup 11, and suitable connections between said hand-lever and brake block or blocks, substantially as herein described, for the purpose specified.

6. In brake apparatus for vehicles, such as railway-wagons, the combination, with a brake block or blocks, of a hand-lever 9, arranged to extend transversely of the vehicle, or approximately so, and provided with a projection 13, a guide or stirrup 11, having recesses 12, adapted to receive and hold said projection, a rod 8, rods 8^a 8^a, each jointed at one end to said rod 8, and at its other end to one

arm of said hand-lever, and suitable connections between said rods 8 and brake block or blocks, substantially as herein described, for the purposes specified.

7. In brake apparatus for vehicles, such as railway-wagons, the combination, with a brake block or blocks, of a hand-lever, such as 9, arranged to extend transversely, or approximately so, of the vehicle and capable of being actuated from either side thereof indifferently, a holding device adapted to hold said lever in the on or off position, rod 8, arranged to be operated by said lever, means for directly actuating said brake block or blocks, and a spring, such as 14, arranged between said rod 8, and the means for actuating said brake block or blocks, substantially as herein described, for the purpose specified.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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JOHN CHARLES TAITE.

THOMAS WILLIAM CARLTON.

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